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CANADA

REPORT

OF THE

MINISTER OF PUBLIC

ON THE

WORKS UNDER HIS CONT

FOR THE FISCAL YEAR ENDED

1903

SUBMITTED IN ACCORDANCE WITH THE PROVISI
SECTION 37 OF THE REVISED STATUTES

PRINTED BY ORDER OF PARLIAMENT

OTTAWA
PRINTED BY S. E. DAWSON, PRINTER TO THE K
EXCELLENT MAJESTY
1904

No. 10—1904.]—*Price, 35 cents.*

CANADA

REPORT

OF THE

MINISTER OF PUBLIC WORKS

ON THE

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FOR THE FISCAL YEAR ENDED JUNE 30

1903

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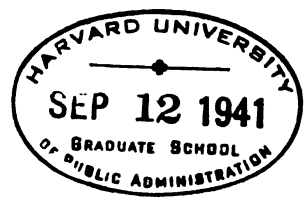

To His Excellency the Right Honourable Sir Gilbert John Elliot, Earl of Minto, G.C.M.G., &c., &c., &c., Governor General of Canada.

MY LORD,

I have the honour to lay before your Excellency the Report of the Department of Public Works of Canada, for the fiscal year ended June 30, 1903.

I have the honour to be,

My Lord,

Your Excellency's most obedient servant,

JAMES SUTHERLAND,

Minister of Public Works.

OTTAWA, March 2, 1904.

CONTENTS

Part I.—DEPUTY MINISTER'S REPORT.
" II.—ACCOUNTANT'S REPORT.
" III.—CHIEF ARCHITECT'S REPORT.
" IV.—CHIEF ENGINEER'S REPORT.
" IV.—APPENDIX. MONTREAL GRAIN ELEVATOR.
" V.—GENERAL SUPT. OF TELEGRAPHS' REPORT.
" VI.—COLLECTOR OF REVENUE'S REPORT.
" VII.—MISCELLANEOUS REPORTS.

ALPHABETICAL INDEX TO REPORT

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
A							
Accountant's report		1					
Acts of Parliament							16
Adolphustown, Ont				193			
Agassiz, B.C., Expl. farm		8, 26					
Agency Public Works, B.C		21					
Aitkins wharf, P.E.I		12		65			
Alameda, N.W.T., lands office		26					
Alberni-Cape Beale, B.C., telegraph		20			5, 32		
Alberni-Clayoquot " "		20			5, 33		
Algoma Mills, Ont		16		122			
Alma, N.B		13		98			
Almonte, Ont., public building		5, 23					
Amaguadees Pond, N.S		10		7			
Amherstburg, Ont., public building		5, 23					
Amherst, N.S., public building		3, 22					
Amherst, P.Q		14		99			
Anderson Lake, B.C		18		142			
Anderson's Hollow, N.B		13		75			
Annapolis, N.S., public building		3, 22	8				
Anse-à-Beaufils, P.Q		13		100			
Anse-à-l'Eau, P.Q		16		121			
Anse St. Jean, P.Q		13		100			
Anticosti-Gaspé, telegraph		19			7, 17		
Antigonish, N.S., public building		3, 22					
Architect's report			1				
" staff		21					
Arichat, N.S., public building		3, 22	8				
Arisaig, N.S		10		7			
Arnolds Point, N.S			35				
Arnprior, Ont., public building		5, 23					
Arrow Lakes, B.C		18					
Art Gallery, Ottawa		6, 24					20
Ashcroft-Dawson, telegraph		20					
Ashouapmouchouan, P.Q		13					
Atlin, Y. T., post office		8, 26					
Aylmer, P.Q., public building		4, 22					
B							
Back Bay, N.B		10		76			
Baddeck, N.S., public building		3, 22	4				
Baie St. Paul, P.Q		13		100			
Bailey Brook, N.S		10		8			
Barrie, Ont., public building		5, 23					
" wharf		16		123			
Bass River, N.S		10		8			
Bathurst, N.B., public building		4, 22					
" wharf		13		76			
Batiscan, P.Q				189			
Battleford, N.W.T., public building		7					
" bridge		19		229			
Bay du Vin, N.B		13		77			
Bayfield, Ont		16		123			
Bay Fortune, P.E.I		12		65			
Bay of Fundy, N.B., telegraph		19			4, 22		
Bear River, N.S		10		9			
Belfast Pier, P.E.I		12					
Belle Isle, P.Q., telegraph		19			10, 27		
Belleville, Ont., public building		5, 23					

Names of Places. &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
B							
Belœil, P.Q.		13		232			
Berlin, Ont., public building		5, 23					
Bersiamis, P.Q., telegraph	11				9, 25		
Berthier (en haut), P.Q.		14		100			
Berthierville, P.Q., public building		4, 22					
Bic, P.Q		14		101			
Big Bay, Ont		16		123			
Big Pond, N.S.		10		9			
Birtle Man., immgn. building		7					
Black Brook, N.B.		13		78			
Black River, Ont. slides, &c		18		222			
Blanche Shoals, P.Q				189			
Blind River, Ont.		16		123			
Blooming Point, P.E.I		12					
Bouchard, T., gratuity		20					
Boucherville, P.Q.		13		101, 189			
Boularderie, N.S.		10		10			
Bowmanville, Ont., public building		5					
" harbour		16		124, 194			
Brae, P.E.I.				66			
Brampton, Ont., public building		5, 24					
Brandon, Man. "		7, 25					
Brantford, Ont. "		5, 24					
Bridges and roads		19		228			
British Columbia, dredging	8	18		212			
" dredging plant	8	18		212			
" expenditure		21					
" harbours and rivers		18		142			
" public buildings		8, 26	24				
" telegraphs		20			11, 31		
Brockville, Ont., public building		5, 24					
Bronte, Ont		16		124			
Brooklyn, N.S.		10		10			
Bruce Mines, Ont.		16		124			
Bryon Island, P.Q., telegraph		19			8, 18		
Buckingham, P.Q., public building		4, 22					
Burk's Falls, Ont		16		125			
Burlington Channel, Ont.		16		125			
Burlington, N.S		10		11			
Burnt Church, N.S		10					
C							
Cable Ship		20			12		
Cable telegraph tariff					42		
Cacouna, P.Q.		14		102			
Calender, Ont.		16		125			
Calgary, N.W.T., bridge		19					
" " public buildings		7, 26	22				
Campbell's Cove, P.E.I.		12		66			
Campbellton, N.B.		13		78			
Campobello, N.B		13					
Canada, Creek, N.S.		10		11			
Canoe Cove, P.E.I.		12		67			
Cap à l'Aigle, P.Q.		14					
Cape Auguet, N.S.		10		12			
Cap aux Corbeaux, P.Q		13					
Cape Beale, B.C., telegraph		24			11, 32		
Cape Breton, telegraph					6, 19		
Cape Cove, N.S.		10		12			
Cap de la Madeleine, P.Q		14		232			
Cape Ray, telegraph		19			6, 16		
Cap Santé, P.Q.		14		102			
Cape Tormentine, N.B.		13		79,151			
Caraquet, N.B.		13		80			
Caretakers, &c.							
Careys Passage				13			

Names of Places, &c.	Part 1. Page	Part 2. Page	Part 3. Page	Part 4. Page	Part 5. Page	Part 6. Page	Part 7. Page
C							
Cariboo Islands, N.S.		10		13			
Carleton, P.Q.		14		102			
Carleton, N.B., post office		4,22					
Carleton Place, Ont., public building		5,24					
Carnduff, N.W.T., court house		7,26	22				
Cascumpec, P.E.I.		12		67			
Cayuga, Ont., public building		5,24					
Cement laboratory				229			
Chapel Point, P.E.I.		12		68			
Chantry Island, Ont.		16		125			
Charlesville, N.S.		10		13			
Charlottetown, P.E.I., public building		3,22	3				
Chatham, N.B., public building		4,22					
Chatham, Ont., "		5,24					
Chaudière bridge, Ottawa				228			
Chegoggin, N.S.		10		14			
Cheneaux booms				220			
Cheticamp, N.S., telegraph		19			7, 20		
" wharf				14			
Cheverie, N.S.		10		14			
Chicoutimi, P.Q.		14					
" engineer's office		23					
Chief Accountant, report		1					
Chief Architect, report			1				
" staff		21					
Chief Engineer, report				1			
" staff		21					
Chief Officers							23
Chockfish, N.B.		13		80			
Church Point, N.S.		10		15			
Clerks of Works, salaries		9					
Clifton, N.B.		13		81			
Clinton, Ont., public building		5	11				
Coaticook, P.Q., "		4, 23					
Cobourg, Ont., "		5, 24					
" harbour		16		126, 194			
Cole's Point, N.B.		13		81			
Collector of Revenue						1	
Collection of Slides and Booms dues						7	
Collingwood, Ont.		16		126, 194			
Columbia River, B.C.		18		143			
Comeau, N.S.		10		16			
Comeau Hill, N.S.		10		16			
Comeauville, N.S.		10		17			
Contracts let, &c.							6
Cordova Mines, Ont., post office		5					
Cornwall, Ont., public building		5, 24					
" wharf		16		126			
Correspondence, official							41
Coteau Landing, P.Q.		14		190, 232			
Côte Ste. Catharine, P.Q.		14		233			
Coulonge River, slides, &c.		18		221			
Cove Head, P.E.I.		12		68			
Cow Bay, N.S.		10		17			
Cranberry Head, N.S.		11					
Cranberry Pier, P.E.I.		12		63			
Crapaud, P.E.I.		12		74			
Crane Island, P.Q.		14		105			
Cribbins Point, N.S.		10		18			
Cross Point, P.Q.		14		102			
Cuisses d'Alma, P.Q.				103			
Curator's Report, Art Gallery							19
D							
Dalhousie, N.B., public building		4, 22					
Dartmouth, N.S., public building		3, 22					

Names of Places, &c.	Part 1. Page.	Part 2. Page.	Part 3. Page.	Part 4. Page.	Part 5. Page.	Part 6. Page.	Part 7. Page.
D							
Dauphin, Man., public buildings		7, 26					
Dawson, telegraph					12, 34		
Departmental photographer		21					
Depot Harbour, Ont.		16		127			
Deputy Minister's report	1						
Descente des Femmes, P.Q.		14		121			
Descousse, N.S				19			
Deseronto, Ont., public building		5, 24	12				
Des Joachims bridge		19		228			
Digby, N.S		10		19, 148			
" public building		3, 22	4				
Dipper Harbour, N.S		13					
Dominion public buildings		3, 22	1				
Dorchester, N.B		13		81			
Doucet's Landing, P.Q		14		190			
Dredges—disbursement		18					
Dredges and plant	6			151, 179			
Dredging, British Columbia		18					
" Manitoba		17		209			
" Maritime provinces		10		148			
" New Brunswick		13		151			
" Nova Scotia		10		148			
" Ontario		16		193			
" Operations	6			147			
" Plant, names, &c		18		151,179			
" Prince Edward Island		12		150			
" Quebec		13		168			
" St. Lawrence ship channel	4, 7	15		168			
Drum Head, N.S		10		21			
Drummondville, P.Q., public building		4, 23					
Dry Docks				217			
Dumoine River, P.Q		18		222			
Duncan River, B.C		18		143			
Dundas, Ont., public building		5, 24					
Dundee, P.Q., custom house		4					
E							
Eagle Head, N.S		10		22			
East Bay, N.S		10		22			
East Berlin, N.S		10		22			
East Selkirk, Man		25					
Eboulements, P.Q		14		107			
Ecum Secum, N.S		10					
Edmonton, N.W.T., bridge		19					
" public building		7, 26	22				
Employees, graving docks							31
" salaries of		21					
" slides and booms							27
Engineers, firemen, &c							33
Engineer (chief) report				1			
" staff (salaries)		21					
Englishtown, N.S		10					
Escuminac, N.B., telegraph		19			23		
Esquimalt, B.C., graving dock		18		217		6, 13	
" custom house		26					
Expenditure, total	3	21					
F							
Farnham, P.Q., public building		5, 23					
Father Point, P.Q., telegraph		19					
" pier		14		103			
Faulkner's Creek, N.S		10					
Findlay's Point, N.S		10		23			
"Fielding, W. S."	6						
Fort Dufferin, N.B		13		82			
Fort Lawrence, N.S		10		23			

Names of Places, &c.	Part 1. Page.	Part 2. Page.	Part 3. Page.	Part 4. Page.	Part 5. Page.	Part 6. Page.	Part 7. Page.
F							
Fort William, Ont., dredging				194			
Fort William, Ont., public building		5	12				
Fraser River, B.C.		18		144			
Fraserville, P.Q., public building		4, 23					
Fredericton, N.B., "		4, 22					
Frenchmen's Bay, Ont.		17		133, 196			
French River, N.S.		10		23			
Friar's Head, N.S.		10		24			
G							
Galt, Ont., public building		6, 24					
Gananoque, Ont, public building		6, 24					
" harbour		16		195			
Gaspereau, P.E.I		12					
Gatineau River, slide		18		220			
Georgetown, P.E.I.		12		69			
Gimli, Man.		17		141			
Goderich, Ont., harbour		16		128, 195			
" public building		6, 24					
Golden, Windermere, telegraph		20			33		
Graham, P.Q		14		190			
Graham's Pond, P.E.I				69			
Granby, P.Q., public building		23	8				
Grand Anse, N.B		13		83			
Grand Bergeronnes, P.Q		14		103			
Grand Descharge, P.Q.		14					
Grand Entry, P.Q.		14		103			
Grand Etang, N.S.		10		24			
Grand Falls, N.B		13		93, 94			
Grand Lake Flats, N.B.		13					
Grand Narrows, N.S.		10		25			
Grand River, Ont., York bridge		19					
" N.S.				25			
Grande Vallée, P.Q.		14		103			
Granville Centre, N.S.		10		26			
Gratuities		21					
Graving docks				217		6, 15	
" officials							31
Green Cove, N.S		10		26			
Green River, N.B.		13		95			
Green Shoals, P.Q		14					
Grenville, P.Q		14		190			
Grindstone, P.Q.		14		104			
Gross Isle, P.Q., wharf		14					
" quarantine station		4, 23	8				
" telegraph		19			10, 23		
Gros Nez, N.S		10		26			
Guelph, Ont., public building		6, 24	12				
Gull Harbour, Man.		17		141			
Guysboro', N.S., public building		3	4				
Gypsumville, Man		17		209			
H							
Haileybury, Ont		16		128			
Halliday's Wharf, P.E.I.		12		150			
Halifax, N.S., drill hall		3, 22	5				
" examining warehouse		3, 22	5				
" custom house		3	4				
" graving dock		10					
" immigrant building		3, 22	5				
" public buildings		3, 22	4				
" quarantine		3	5				
Hamilton, Ont., harbour		16		125			
" public building		6, 24					
Hampton, N.S		10		27			
Harbours and Rivers, generally	4	18		7			

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
H							
Hardy Bay, B.C		18		144			
Harwood, Ont		16		128			
Hawkesbury, Ont		16		195			
Hawkestone, Ont		16					
Hawke Point, N.S.		10		28			
Heating public buildings	10	22					
Herring Cove, N.B				83			
Herring Cove, N.S		10		10, 28			
Hickey's Pier, P.E.I		12		69			
Hilton, Ont		16		129			
Hnausa, Man		17		142			
Hochelaga, P.Q., public building		4, 23					
Hopewell Cape, N.B		13		84			
Hopewell Hill, N.B		13		84			
House (150 miles) telegraph		20			12		
House Harbour, P.Q		14		104			
Hudson, P.Q		14		104			
Hull, P.Q., bridge		19					
" pier		14		105			
" public building		4, 23					
Hunts Point, N.S		10		28			
Huntsville, Ont		16		129			
Hydrographic Survey				231			
I							
Indian Head, N.W.T., experimental farm		8, 26					
Indian Brook, N.S		10		29			
Ingersoll, Ont., public building		6, 24					
Ingonish, N.S		10					
do south, N.S				30			
Iona, N.S		10		29			
Irish Cove, N.S		10		30			
Iroquois River, N.B				95			
Isaac harbour, N.S		10		31			
Island Point, N.S		10		31			
Isle aux Coudres, P.Q., wharf		14		105			
" " telegraph		19					
Isle aux Grues, P.Q				105			
Isle Grosbois, P.Q		14					
Isle Verte, P.Q		14		106			
J							
Janvrins Island, N.S				31			
Joliette, P.Q., public building		4, 23					
Judique, N.S		10		32			
K							
Kaministiquia River, Ont		17		195			
Kamloops, B.C., armoury		8	24				
" " post office		8, 26					
Kamloops-Nicola, telegraph		20			31		
Kamouraska, P.Q		14		233			
Kaslo, B.C., armoury		8, 26	24				
Kempt Head, N.S		10		32			
Kennedy Lake, B.C		18		142			
Kentville, N.S., public building		3, 22	5				
Kincardine, Ont		16		129			
Kingsport, N.S		10		32			
Kingsville, Ont		16		129,195			
Kingston, Ont., drill hall		6					
" graving dock		16		217			6, 15
" harbour		16		196			
" military college		6, 24	13				
" public buildings		6, 24	13				
Knights Point, P.E.I		12					

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
L							
Labrador, telegraphs					9		
Lachine, P.Q., dredging		14		190			
" public building		4, 23					
Lacombe, N.W.T., immigration building		8, 26					
Lake Dauphin, Man		17					
Lake Francis "		17		142			
Lake Manitoba "		17					
Lake Simcoe and Couchiching, Ont.		16					
Lake St. John, P.Q		14					
Lake St. Louis, P.Q		14					
Lake St. Peter, P.Q				174			
Lake Temiscamingue, P.Q		14		110,190			
Lamberts Pier, P.E.I		12		73			
Lameque, N.B		13		85			
Lancaster, Ont		16					
Land leased, &c							14
Lanoraie, P.Q		14					
Laprairie, P.Q., ice piers		14		106			
" public building		4, 23					
L'Ardoise, N.S		10		33			
Larry's River, N.S		10		34			
L'Assomption, P.Q., public building		4	9				
Laurier bridge, Ottawa				228			
Lavaltrie, P.Q		14		191			
Lawlor's Island, N.S., quarantine station			5				
Leased properties							14
Leduc, N.W.T., immigration building		26					
Lennox Passage, N.S		10					
Les Cuisses, P.Q				103			
Les Eboulements, P.Q		14		107			
Les Ecureuils, P.Q		14		107			
Les Escoumains, P.Q				107			
Le Tableau, P.Q		14		121			
Lethbridge, N.W.T., public building		8, 26					
" " bridge		19					
Letters, departmental, sent and received							41
Levis, P.Q., graving dock		14		217		6, 14	
" quarantine		4	9				
Lewis Point, P.E.I		12					
Lewis, Yukon rivers		18					
Lighting, public buildings	10	22					
Lindsay, Ont., public building		6, 24					
Lingan, N.S		10		34			
L'Ile d'Alma, P.Q		14					
L'Islet, P.Q		14		107			
Little Bras d'Or, N.S		10					
Little Harbour, N.S		11		35			
Little Narrows, N.S		11		35			
Little Salmon River, N.B		13		85			
Liverpool, N.S		11		149			
" " public building		3, 22					
Livingston Cove, N.S		11		34			
Loggieville, N.B		13		78			
Longueuil, P.Q		14		108			
London, Ont., drill hall		6	13				
" public building		6, 24					
Lord's Cove, N.B		13		85			
Lotbinière, P.Q		14		108			
Lower Cove, N.S		11		35			
Lower Montague, P.E.I		12					
Lower d'Escousse, N.S		11					
Lower St. Lawrence, piers		14					
Lower West Pubnico, N.S		11		36			
Lunenburg, N.S., public building		3, 22					
M							
McNair's Cove, N.S		11		39			

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
M							
Mabou, Port Hawkesbury telegraphs		19			6, 20		
Mabou, N.S		11		36			
Macleod, N.W.T., bridge		19					
" public building		8, 26	23				
Madawaska River, slide		18		221			
Magaguadavic, N.B		13		97			
Magdalen Islands, P.Q		14					
" telegraph		19			7, 18		
Main-à-Dieu, N.S		11		37			
Maitland, N.S		11		38			
Malbaie, P.Q		15		233			
Malignant Cove, N.S		11		37			
Manicouagan, telegraphs					9		
Manitoba, dredging	8	18					
" harbours and rivers		17		141			
" public buildings		7, 25	21				
Marconi—wireless telegraphy					10		
Margaree Harbour, N.S		11		38			
Margaree Island, N.S		11					
" Harbour, telegraphs					7		
Maria, P.Q		15		108			
Maria Street bridge, Ottawa				228			
Maritime Provinces, dredging		18		148			
" public buildings		4	3				
" telegraphs		19			6, 17		
Marysville, N.B., public building		4					
Matane, P.Q		15		109			
Meaford, Ont		16		130			
Meat Cove, N.S., telegraph		19			6, 20		
Medicine Hat, N.W.T., public building		8, 26					
Meteghan Cove, N.S		11		40			
Meteghan River, N.S		11		41			
Middleton, N.S., armoury		3	5				
Midland, Ont		16		130			
Miminigash, P.E.I		12		70			
Minnedosa, Man., lands office		25					
Minudie, N.S		11		43			
Mispic, N.B		13					
Mistassini, P.Q		15					
Mizonnette, N.B		13		86			
Moncton, N.B., public building		4					
Monk's Head, N.S		11		42			
Montague, P.E.I., public building		3, 22					
Montague Bridge, P.E.I		12		150			
Montmagny, P.Q., public building		4, 23					
Montreal, P.Q., custom house		4, 23	9				
" examining warehouse		4, 23	9				
" elevator	11			235			
" harbour		15, 28		109			
" inland revenue building		4, 23	10				
" post office		4, 23	10				
Moose Jaw, N.W.T., public buildings		8, 26					
Moosomin, N.W.T. "		8, 26					
Morrison's Beach, P.E.I		12		70			
Murray Bay, P.Q		15		233			
Murray Harbour, P.E.I		12		150			
Murray River, P.E.I		12		151			
N							
Names of Chief Officers							23
Nanaimo, B.C., harbour		18					
" public buildings		8, 26	25				
Nanaimo—Comox, telegraph		20			11, 32		
Napanee, Ont., public building		6, 24					
Nappan, N.S., experimental farm		3					
National Art Gallery, Ottawa		6, 24					20

Names of Places, &c,	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
N							
Necum Teuch, N.S.		11		43			
Negro Point, N.B.		13		86			
Neguac, N.B.		13		89			
Neil's Harbour, N.S.		11		44			
Nelson, B.C., public building		8, 26	25				
New Brunswick, dredging		13		151			
" harbours, &c		13		75			
" public buildings		4, 22	6				
" telegraphs		19			7, 22		
New Campbellton, N.S.				44			
New Carlisle, P.Q		15		109			
Newcastle, N.B., public building		4					
Newcastle District, slides and booms				226		5	
Newcastle, Ont		16		131, 196			
Newfoundland, telegraph		19			6, 16		
New Glasgow, N.S., public building		3, 22					
New Harbour, N.S		11		44			
New Liskeard, Ont		16					
New London, P.E.I		12		71			
Newport, P.Q		15					
New Westminster, B.C., public bldgs		8, 26	25				
Niagara Falls, Ont, public building		6, 24					
Nicolet, P.Q		15		191			
North Bay, Ont		17					
Northern, N.W.T., immigration shed		26					
North Keppel, Ont		16					
North River, St. Ann's, N.S		11		45			
North Shore, St. Lawrence, telegraphs		19			8, 24		
North Sydney, N.S., public building		3, 22					
" harbour		11		149			
North-west Territories, bridges		19		229			
" public buildings		7, 26	22				
" telegraphs		20			10, 29		
Notre-Dame de Pierreville, P.Q				191			
Notre-Dame du Lac, P.Q		16		110			
Nova Scotia, dredging		10		148			
" harbours	5	10		7			
" public buildings		3, 22	3				
" telegraphs		19			6, 19		
Nyanza, N.S		11		45			
O							
Oak Point, N.S.				32			
Oakville, Ont		17		131			
Officers of the Department							23
Officers employed on graving dock							31
" " slides and booms							27
Official correspondence							41
Ogden's Pond, N.S.		11		46			
Old Man River bridge		19					
Ontario, bridges		19		228			
" dredging		18		193			
" harbour, &c	5			122			
" public buildings		5, 23	11				
" telegraphs		20			10, 28		
Orangeville, Ont., public building		6, 24					
Orillia, Ont., public building		6, 24					
" harbour		17		131			
Oromocto, N.B.		13					
Oshawa, Ont.		17		132			
Otanabee River		17					
Ottawa, government house		6, 24	14				
" buildings and grounds		6, 24	18				
" laboratory		6	14				
" Major's Hill Park		6, 24	17				
" Art gallery		6, 24					20
" observatory		6	17				

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
O							
Ottawa Parliament & departmental bl'd'gs.		6, 24	18				
" post office		6, 24	18				
" printing bureau		6, 24	18				
" river		15		189			
" slides and booms		18		219		3, 10	
" roads and bridges		19		228			
" streets, repairs			17				
Owen Sound, Ont		17		132			
P							
Pacific cable tariff					43		
Papineauville, P.Q		15		191			
Paris, Ont, public building		6, 25					
Parkers Cove, N.S		11		46			
Parliament buildings, Ottawa		6, 24	18				
Parrsboro, N.S		11					
Partridge Island, N.B., quarantine		4					
" wharf		13		90			
Pelee Island, Ont., wharf		17		132			
" telegraph		20			10, 28		
Pembroke, Ont., public building		6, 25					
Pender Island, B.C		18					
Penetanguishene, Ont		17		133			
Percé, P.Q		15		110			
Pereaux, N.S		11		47			
Peribonca, P.Q., immigration building		5, 23					
" wharf		15					
Peterborough, Ont., public building		6, 25					
Petewawa River, slides		18		222			
Petit de Grat, N.S		11		47			
Petite Rivière St. Anne, P.Q		14		110			
Petrolea, Ont., public building		6, 25					
Philippsburg, P.Q		15		111			
Photographer, departmental		21					
Pickering, Ont		17		133, 196			
Picton, Ont., public building		6, 25					
Pictou Island, N.S		11		48			
Pictou, N.S., public buildings		3, 22					
" dredging				148			
Pierreville, P.Q		15		191			
Pinkneys Cove, N.S		11		48			
Pipers Cove, N.S				48			
Pleasant Bay, N.S				49			
Plymouth, N.S		11		49			
Pointe à Élie, P.Q		14		111			
Pointe aux Esquimaux, P.Q		15		111			
Pointe Claire, P.Q		15		192			
Pointe du Chene, N.B		13		90, 152			
Point Edward, Ont		17		133			
Point Fortune, P.Q		15		112			
Point Pelee Island, Ont		17		132			
Pointe St. Pierre, P.Q		15		112			
Poirierville, N.S		11					
Pond Creek bridge, P.Q				229			
Ponoka, N.W.T., immigration building		26					
Portage du Fort, P.Q., bridge		19					
Portage la Prairie, Man., public building		7, 25					
Port Arthur, Ont., harbour		17		196			
" public building		6, 25					
Port Burwell, Ont		17					
Port Colborne, Ont., harbour		17		133			
" public building		6, 25					
Port Daniel, P.Q		15		112			
Port Dalhousie, Ont, post office, &c		6					
Port Elgin, Ont		17		135			
Port George, N.S		11		49			

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
P							
Port Greville, N.S.		11		50			
Port Hawkesbury, N.S.		11		50			
Port Hood, N.S.		11		51			
Port Hope, Ont., harbour		17		135, 196			
" public building		6, 25					
Port Latour, N.S.		11		51			
Port Larue, (Lorne) N.S.		11		52			
Port Morien, N.S.		10		17			
Port Rowan, Ont.		17		135			
Port Simpson, B.C., telegraph		20			35		
Port Stanley, Ont		17		136			
Porters Lake, N.S.		11		53			
Portland, N.B., public building		4, 22					
Portsmouth, Ont.		17		136			
Pownal, P.E.I.		12		71			
Prescott, Ont., public building		6, 25					
" dredging				197			
Presque Ile, Ont.		17					
Prince Albert, N.W.T., public building		8, 26					
Prince Edward Island, dredging		12		150			
" harbours		12		65			
" public buildings		3	3				
" telegraph		19					
Printing Bureau, Ottawa		6, 24	18				
Printing and stationery		9					
Properties purchased and sold							12
Prospect, N.S.		11		53			
Public buildings, British Columbia		8, 26	24				
" Manitoba		7, 25	21				
" New Brunswick		4, 22	6				
" North-West Territories		7, 26	22				
" Nova Scotia		3, 22	3				
" Ontario		5, 23	11				
" Prince Edward Island		3, 22	3				
" Quebec		4, 22	8				
" Yukon Territory		9	27				
" generally	8	9, 27	27				
Public Works Agency, B.C.		21					
Q							
Quaco, N.B.		13		90			
Qu'Appelle, N.W.T., court house		8, 26					
Quebec—dredging		18		168			
" bridges		19		228			
" harbours, &c.	5	13		99			
" public buildings		4	8				
" telegraphs		19			8, 23		
Quebec city—artillery workshops		5	10				
" cartridge factory		5	10				
" custom house		4, 23	10				
" examining warehouse		5, 23	10				
" immigration building		5, 23	10				
" King's wharf		5, 23	10				
" post office		5, 23	10				
" harbour	5	15		113			
" observatory		23					
Quesnelle—Atlin telegraph		20			12, 24		
R							
Racquette, N.S.				150			
Ragged Head, N.S.		11		54			
Rat Portage, Ont., public building		6, 25					
Red Deer, N.W.T., immigration building		8, 26					
Red Point, P.E.I		12		71			
Red River, Man.		17		209			
Red Store Wharf, N.B.		13					

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
P							
Regina, N.W.T., public buildings		8, 26	23				
Rents, received						6	
" paid		22					
Revelstoke, B.C., armoury		8	25				
Revenue						7	
Richard's Landing, Ont	4	17		136			
Richelieu River, P.Q.		18		192			
Richibucto, N.B.		13		91			
" post office		4					
Richmond, P.Q., public building		5, 23					
Richmond, P.Q.				113			
Rideau, Hall, Ottawa		6, 24	14				
Rimouski, P.Q., public building		5, 23					
" wharf		15		114			
River Kaministiquia, Ont		17					
" St. Francis, P.Q.		15		113			
" St. John, N.B.		13		92, 151			
" St. Lawrence	4-7	15, 17		168			
" St. Louis, P.Q.		16					
" St. Maurice, P.Q.		15					
" Thames, Ont.		17		139			
Rivière au Renard, P.Q.		15					
" Batiscan, P.Q.		15					
" Blanche, P.Q.		15		114			
" Cap Chatte, P.Q.		15					
" Chateauguay, P.Q.		15		189			
" des Vases, P.Q.		15		113			
" du Nord, P.Q.		15		192			
" du Lièvre, P.Q.		15		217		6	
" du Loup, P.Q.		15		115			
" Jésus, P.Q.		15		192			
" Noire, P.Q.		15		114			
" Saguenay, P.Q.		15					
" Touladie, P.Q.		15					
Roads and bridges		19		228			
Roberval, P.Q., harbour		15		115, 192			
" immigration building		5, 23					
Romaine—Belle-Ile, telegraph		20			10, 26		
Rondeau, Ont.		17		136, 197			
Rossland, B.C., public buildings		8, 27	25				
Round Bay, N.S.		11		54			
Ruisseau LeBlanc, P.Q.		15		233			
Rustico, P.E.I.		12		72			
S							
Ste. Adelaide de Pabos, P.Q.		15		117			
St. Albert-Rivière qui Barre, telegraph		20					
St. Alexis, P.Q.		15		116			
St. Alphonse, P.Q.		15		116			
St. André de Kamouraska, P.Q.		15		116			
St. Andrews Rapids, Man		17		218			
St. Andrews, N.B.		13		96			
Ste. Anne de Bellevue, P.Q.		15					
Ste. Anne de la Pérade, P.Q.		15					
Ste. Anne de la Pocatière, P.Q.		15					
Ste. Anne du Saguenay, P.Q.		15		117			
" " telegraph		20					
Ste. Anns Beach, N.S.		11		57			
St. Catharines, Ont., public building		6, 25					
Ste. Emelie, P.Q.		15					
Ste. Famille, P.Q.		15		117			
St. Francis, N.B.		13		95			
St. François, P.Q.		15		117			
Ste. Fulgence, P.Q.		15		118			
St. George, N.B.		13		97			
Ste. Geneviève, P.Q.		15		118			
St. Henry, P.Q., post office		5, 23					

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
S							
St. Hyacinthe, P.Q., public building		5, 23					
St. Irénée, P.Q		15		118			
St. Jean, P.Q		15		119			
St. Jean Port Joli, P.Q		15		119			
St. Jérôme, P.Q., public building		5, 23					
" wharf		15		119			
St. John River, N.B				151			
St. John, N.B., harbour		13					
" public buildings		4, 22					
St. Johns, P.Q., dredging		15					
" public building		5, 23					
" booms		18					
St. Joseph, Ont		17		138			
St. Lambert, P.Q		15					
St. Laurent, C. E. Arthur	11			235			
St. Laurent, P.Q		16		119			
St. Louis River, P.Q		16		97			
St. Louis, N.B		13					
St. Mary, N.W.T., court house		8					
St. Marys Bay, P.E.I				73			
St. Marys River, N.S		11		150			
St. Marys, N.B		13		98			
St. Marc, P.Q		16					
St. Mathias, P.Q		16		120			
St. Maurice, slides and booms		18		225		4	
" dredging		15		192			
St. Michel, P.Q		16		120			
St. Nicholas, P.Q		16		120			
St. Nicholas Island, P.Q		16		191			
St. Peters-Louisburg, telegraph		19			5		
St. Peters-Canso, telegraph		19			5		
St. Peters Bay, P.E.I		12		73			
St. Roch, P.Q., post office		5, 23					
St. Simeon, P.Q		16		121			
St. Stephen, N.B., public building		4, 22					
St. Sulpice, P.Q		16					
St. Thomas, Ont., public building		6, 25					
St. Zotique, P.Q		16		233			
Salmon River, N.B		13					
Salmon River, B.C		18		144			
Sandford, N.S		11		54			
Sandy Cove, N.S		11		55			
Sarnia, Ont., public building		6, 25	20				
Saskatoon, N.W.T., immigration building		8, 26	24				
Sault Ste. Marie, Ont		17		137			
Sault Ste. Marie, Ont., public building		6					
Scugog River, Ont		17					
Secretary's staff, salaries		21					
Selkirk, East, Man., immigration building		7					
Selkirk, Man., wharf		17		142			
Serpentine River, N.B		13					
Shag Harbour, N.S		11					
Sherbrooke, P.Q., public building		5, 23					
Shequiandah, Ont		17		137			
Ship Channel, St. Lawrence	4, 7	15		168			
Shippegan, N.B		13		95			
Ship yard, Sorel, P.Q				177			
Short Beach, N.S		11		56			
Skeena River, B.C		18		144			
Skinners Pond, P.E.I		12		72			
Slides and booms		18		219			
Slide dues, uncollected						3	
Slides and booms, officials						8	
Smith's Falls, Ont., public building		6, 25					27
Sober Island, N.S		11		56			
Sommerville, N.S		11					
Sonora, N.S		11					
Sorel, P.Q., harbour	5	16		115,192			

Names of Places, &c.	Part 1. Page.	Part 2. Page	Part 3. Page	Part 4. Page	Part 5. Page	Part 6. Page	Part 7. Page
S							
Sorel, P.Q., public building		5, 23					
" ship yard				177			
Souris, P.E.I.		12		72			
Southampton, Ont.		17					
South Gut, N.S.		11		56			
South Ingonish, N.S.		11					
South Nation River, Ont.		17		137			
South West, Port Mouton, N.S.		11		57			
Springhill, N.S., public building.	10	3, 22	6				
Springhill, N.B.				153			
Stephens pier, P.E.I.		12		73			
Stonehaven, N.B.		13		81			
Stratford, Ont., public building		6, 25					
Strathcona, N.W.T., immigration building		8, 26					
Strathroy, Ont., public building		6, 25					
Sturgeon Falls, Ont.		17		138			
Summerside, P.E.I., public building		3, 22	3				
Summerstown, Ont		17					
Summerville Centre, N.S.				57			
Superintendent of telegraphs		21			1		
Surveys and inspections	5	21		4			
Sussex, N.B., public building.		4					
Sydenham River, Ont		17		138			
Sydney, N.S., public building.		3, 22	5				
" dredging				149			
T							
Tableau, P.Q.				121			
Tadousac, P.Q.		16		121			
Tariff, telegraph lines					36		
Technical, books of reference		21					
Telephones					15		
Telegraph lines, generally	10	19			4		
" report					1		
" revenue					14		
" service, staff, &c.		20			16		
Temiscouata Lake, P.Q.		16					
Temporary employees		21					
Thames River, Ont.		17		139			
The Gate, N.S.		11		58			
Thessalon, Ont.		17		139			
Thetford Mines, P.Q., public building.		5					
Thornbury, Ont.		17		139			
Three Fathom Harbour, N.S.		11		58			
Three Rivers, P.Q., harbour		16		122, 193			
" public building.		5, 23	11				
Tidnish, N.S.		11		59			
Tignish, P.E.I.		12		74			
Tiverton, N.S.		11		59			
Tobique River, N.B.		13		94			
Toronto, Ont., harbour		17		139			
" public buildings.		7, 25	20				
Total expenditure of department		21					
Tracadie, N.B., lazaretto		4, 22					
Tracadie East, N.S.		12		59			
Transportation	8						
Trent and Newcastle, slides.		18		226		5	
Trenton, Ont., dredging		17					
" public building.		7, 25					
Truro, N.S., "		3, 22					
Tusket Wedge, N.S.		12		60			
Tyran, ss. cable ship.		20			12		
U							
Uncollected slide and boom dues						8	
Upper Salmon River, N.B.		13		98			

Names of Places, &c.	Part 1. Page.	Part 2. Page.	Part 3. Page.	Part 4. Page.	Part 5. Page.	Part 6. Page.	Part 7. Page.
V							
Vaillancourt, F., gratuity		21					
Valleyfield, P.Q., dredging		16		193			
" public building		5, 23					
Vancouver, B.C. "		8, 27	26				
Vancouver Salt Springs, telegraph		20			12		
Victoria, B.C., harbour		18		145, 212			
" public buildings		8, 27	26				
Victoria, Cape Beale, telegraph		20			11, 31		
Victoria, P.E.I		12		74			
Victoria, Ont		17		139			
Victoria, N.S		12		60			
Victoria National Museum	10						
Victoriaville, P.Q., public building		5, 23					
W							
Walkerton, Ont., public building		7, 25					
Washabuck, N.S		12		61			
Water, public buildings		22					
Wedge Point, N.S.		12		61			
Wendover, Ont., harbour		17		140			
West Baccaro, N.S.		12		61			
West Bay, Richmond, N.S		12		61			
West Farnham, P.Q., public building		5, 23					
Western Head, N.S		12		62			
Wetaskinwin, N.W.T., public building		26					
Whitehaven, N.S.		12		62			
White Mud River, Man		17		209			
Whitewater, N.S		12		63			
Whycocomagh, N.S.		13		63			
Wiarton, Ont		17		141			
Williams Head, B.C., quarantine		8, 27	26				
" wharf		18		145			
Wilson's Beach, N.B		13		99			
Windsor, N.S., public building		3, 22					
Windsor, Ont. "		7, 25					
Winnipeg, Man., public buildings		7, 25	21				
Wireless telegraph					10		
Wolfe Island, Ont.			197				
Wolseley, N.W.T., court house		8, 26					
Wood Island, P.E.I		12		74			
Woodstyck, N.B., public building		4, 22					
Woodstock, Ont. "		7, 25					
Y							
Yamaska River, P.Q.		16					
" lock		16		218		6	
Yarmouth, N.S., dredging		12		64			
" public building		3					
York Bridge, Ont.		19					
Yorkton, N.W.T., public buildings		8, 26	24				
Yukon River, Y.T.		18					
Yukon, public buildings		8	27	145			
" rivers, &c.		18		145			
" roads and bridges		19					
" telegraphs	10	20			12, 34		

PART 1

REPORT

OF THE

DEPUTY MINISTER OF PUBLIC WORKS

FOR THE YEAR ENDED JUNE 30

1903

REPORT

OF THE

DEPUTY MINISTER OF PUBLIC WORKS

FOR THE FISCAL YEAR 1902-03

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, March 3, 1904.

The Honourable JAMES SUTHERLAND,
Minister of Public Works,
Ottawa.

SIR,—I have the honour to submit to you the report of the Department of Public Works of Canada for the fiscal year ended on June 30, 1903.

It contains, as usual, an extended review of all the works executed during that fiscal year, with, in addition, the annual financial statement of the Accountant; a report by the Collector of revenue of the moneys received, as well as other statements referring to matters controlled by the department, &c., &c., which I trust will be read with interest.

The expenditure in all branches during the year 1902-3 has amounted to the total sum of $5,830,518.11, divided as follows :—

Harbour and river works	$2,375,536 70
Dredging and plant	982,391 15
Slides and booms	135,624 62
Bridges and roads	46,245 28
Public buildings	1,539,005 60
Telegraphs	559,092 58
Miscellaneous	192,622 18
Total	$5,830,518 11

If to the above is added the sum of $900,000, advanced to the Montreal Harbour Commission during the year, the aggregate sum expended under the supervision of the department, will form a grand total of $6,730,518.11.

It may be interesting to note here, by way of comparison, and to show the steady and rapid growth of the department since it was established, that in 1880 the total of the expenditure amounted to the sum of $1,162,869.56; that in 1890 this sum had been increased to $5,469,497.73, and for the year 1902-3 it amounted to the above named total of $6,730,518.11, while the vote placed at the disposal of the Department of Public Works for the year 1903-4 is shown by the Supply Act to amount to a total of $8,681,-227.20.

REVENUE.

The revenue collected by the department during the year under review shows a total of $276,063.53, an increase over the preceding year of $45,893.97, the details of the revenue in question being as follows:—

Slides and booms	$ 77,522 98
Docks and locks	46,515 14
Telegraphs	132,422 17
Miscellaneous	19,603 24

The increase in revenue under the heading of slides and booms, for the year under review is, therefore $20,187 03
For docks and locks 8,620 51
And for telegraphs 18,185 30

Here again, I may revert to the conditions which existed in 1889, when the collection of revenue was transferred to this department, from the Department of Inland Revenue, and when such collections amounted to the sum of $14,811.86. This progression in the revenue indicates a remarkable advance in the money-producing works constructed by this department for the last twenty years, while the increase in the sums expended by the department shows that the provision made out of the public exchequer keeps pace with the rapid development of the country, and the ever increasing need of additional facilities for its trade and commerce.

HARBOUR AND RIVER WORKS.

In no part of the expenditure made by the Department of Public Works, is the care of the interests of the general trade of the country more patent to the casual observer, than in the large amount applied yearly to the improvement of the harbours and navigable channels of Canadian waters. Adding together the expenditure on harbour works, dredging, and that on slides and booms, we find a total for the last financial year of nearly $3,493,552.47, to which may be added $900,000 advanced to the Montreal Harbour Commission, or nearly four millions and a half for that branch of the public service.

This expenditure not only covers the large and important improvements made in the channel between Montreal and Quebec and at important harbours in the Dominion, but also a number of minor works destined to encourage and foster local trade at points where there is no railway communication, or where new industries have devel-

oped which rely on the easier outlets provided by water transportation for the disposal of products due to the opening up of heretofore closed sections of our country.

In the province of Nova Scotia, for instance, improvements and dredging were performed at 133 places; in Prince Edward Island, 36; in New Brunswick, 45; in Quebec, 140; in Ontario, 74; in Manitoba, 11, and in British Columbia, 15.

The total value of the work in any province must not be altogether determined in the mind of the reader by the number of points at which the expenditure was made. The expense incurred at the 133 places in Nova Scotia does not exceed the sum of $217,000, whilst that in Ontario, although expended at only 74 places, amounts to close upon $900,000. In Nova Scotia, and in parts of the province of Quebec, a large proportion of the expenditure is made for the purpose of helping the fishermen to carry on their often dangerous, but to the country, highly profitable trade. Small boat-harbours are opened up for them in order to enable the fishing boats to be hauled out of reach of storms, and protected against the weather, and small breakwaters are frequently constructed to render easier the entrance of harbours. The trade carried on at each of those points may not be enormously large, but the number of people benefitted is great, the number of lives saved each year by these small expenditures is certainly remarkable, if compared with the number which was lost yearly before the improvements were executed, while the dredging performed at the most important points helps to develop and enlarge an already fast-increasing trade.

In the province of Ontario important works have been carried on in the harbours of Toronto, Collingwood, Meaford, Port Burwell, Rondeau, &c., the Chief Engineer's report giving the detail of work done at those important places. The dredging at Port Arthur, Fort William, Collingwood, and in the various harbours on Lakes Erie and Ontario, has been pushed with activity; the work of the dredges owned by the government being supplemented by that of hired dredges owned by private parties. To the government fleet on the upper lakes will be added for next season a new dipper dredge, the *Progress,* constructed by the department at the Sorel yards,this dredge being of the spoon type, 90·10 feet long by 31·2 wide, and 10·1 feet in depth, with a 4½ cubic yard dipper.

In the province of Quebec the works at Maisonneuve are approaching a successful termination, those at Sorel are completed, and a commencement has been made of an important addition to the Quebec wharfs. The reports of the Chief Engineer gives a detailed description of the other works in this province, as well as of those in the maritime provinces, to which I can only make here a passing reference.

While the works to which I refer have been executed, care has also been taken to look into the demands for further improvements, and for that purpose a number of examinations have been made, amounting in total to 281 during the year. Those examinations have required, in many cases, a rather prolonged stay at each place by the inspecting engineer for the purpose of examining the local conditions, in order to permit of proper reports being made and proper designs being prepared to arrive at the estimated cost of the demands for new improvements. If to that number of 281 be

added the number of works executed in each of the provinces, which amounts to 455, we come to a grand total of 736 points where improvements or surveys have been made in the Dominion under the superintendence of the Chief Engineer and his assistants.

DREDGING OPERATIONS.

Outside of the construction of piers and breakwaters (the detail of which is given in the chief engineer's annual report, appendix 4 hereto), the most important part of the work performed under his direction, has certainly been that covered by the dredging operations of the department throughout Canada.

The fleet at the disposal of the department, to do that work, comprises nineteen dredges with their complement of tugs, scows and coal barges, amounting altogether to 101 vessels of every description. The total amount covered by the dredging operations reaches a sum of $587,190.28, the greatest amount in any province, for dredging, being in Ontario, where the expenditure under that head was $342,387.97. If the amount expended for deepening the ship channel between Montreal and Quebec, where the expenditure has amounted to $255,776.55, be added to the other dredging expenditure of the province, amounting in all to $84,593.69, the grand total for Quebec, including the expenditure on the national highway to the sea, would reach the total of $340,370.24.

The dredging in the maritime provinces has been conducted by means of seven dredges: the *St. Lawrence, Canada, New Dominion, Prince Edward, George MacKenzie, Cape Breton* and *New Brunswick.*

With the exception of the *Cape Breton* and *New Brunswick,* the other dredges are old and of ancient type. Their output is no longer in proportion with the expenditure incurred, nor is their rapidity of work in keeping with the ever-increasing need for the improvement of channels in the eastern provinces. The total number of cubic yards excavated by that fleet of dredges during the year under review, amounted to 389,443 cubic yards. The department has taken into serious consideration the improvement of the dredging fleet in the maritime provinces, both as regards their number and capacity, and parliament has thoughtfully granted the necessary votes for such improvements.

The dredge *W. S. Fielding,* now under construction at Sorel,, will, it is hoped, be fully completed at the end of the present calendar year (1904). When completed, this dredge will be a beautiful vessel, 250 feet long by 42 feet wide and 18 feet in depth, of the combined hydraulic and elevator type. The boat will be a self-propeller and, being built of steel, will have lasting qualities which will permit of its usefulness being exerted to the greatest degree for the work which she will be called on to perform.

A new hydraulic dredge is also to be provided for the maritime provinces, as well as a spoon dredge, to take the place of the *Prince Edward.*

The construction of a dredge on modern lines, and of the type which will give the most satisfactory results with the minimum expenditure of money, is a matter which

unfortunately requires time. Various attempts have been made, and are now being made, to purchase dredges for the department, but the improvements going on, at all points in the United States and in Canada, give employment to mostly all the good dredges which are afloat, so that none but the old machines are now offered for sale, and the department has, perforce, to resort to the construction of such dredges under its own supervision.

That the system of constructing the dredges we require is, after all, the best—if it does not prove to be the quickest mode of procedure—is shown in the result obtained by the dredges operating on the ship channel between Montreal and Quebec. On the great national highway to the sea, six elevator dredges and one hydraulic dredge have been in operation during the fiscal year under review. Those dredges are the *Laval* and the *Laurier,* two wooden vessels of 150 and 160 feet in length respectively; the *Lady Aberdeen* and *Lady Minto,* two vessels of the same type, built of steel, and having a length of 148 feet each; two new wooden dredges, the *Lafontaine* and *Baldwin,* having a length of 168 feet respectively, and the hydraulic dredge *J. Israel Tarte,* built of steel and having a length of 160 feet. All those dredges were built by and under the immediate control of the department, the *Laval* and *J. I. Tarte* having been built by contract, and the five others having been constructed at the government shipyards at Sorel.

During the season under review the fleet of dredges in question has removed a total quantity of 6,544,605 cubic yards, at an aggregate cost, for these dredging operations, of $255,776.55, or at the rate per yard of $3\frac{9}{10}$ c. Prominent in that work is the performance of the dredge *J. I. Tarte,* which, in a period of 127 days of actual work, removed 2,333,200 cubic yards at a cost of $57,846.51, or an average cost per cubic yard of 2·48 cents per yard. During the month of September last, in a period of 25 days, when the dredge was actually at work for 83 per cent of the actual possible time of 132 hours per week, this dredge removed 750,100 cubic yards, or an average of 30,000 yards per day, or 1,250 yards per hour—an output which, I believe, is not excelled or equalled by any dredging machine now afloat on any water in the world.

SHIP CHANNEL.

I may be permitted here to say a few words in reference to the work performed, and to be performed, in the channel between Montreal and Quebec. The total length of the waterway between those two cities is placed at 160 miles, of which the natural channel, not requiring improvement, covers 97½ miles, whilst there are 62½ miles of improved channel. There is no tide for the 82 miles between Montreal and Three Rivers, and over the 20 miles from Three Rivers to Batiscan the tide is not useful for navigation. Over the 22 miles from Batiscan to Portneuf, the tide is helpful to navigation for six hours during each twelve hours, and in the 36 miles from Portneuf to Quebec the tide ranges from 9 to 15 feet of rise. The average current throughout is 2½ miles per hour, the strongest being found at St. Mary's Current, Montreal; at Cap à la Roche, and in the Richelieu Rapids; the most gentle in Lake St. Peter. On an average, navigation closes in the St. Lawrence on November 25 and opens on April 10, giving about 7½ months of navigation. The standard depth in the channel is 27½ feet, for a width of 300 feet, but improvements have been going on for the past years with a

view of giving a channel of 30 feet in depth with a width of 400 feet in the tangents, and from 500 to even 750 feet in the bends.

37·10 miles of the 30 foot channel have been dredged, being 21·80 miles from Montreal to Sorel. 4·90 miles from Sorel to Batiscan, ·90 mile between Batiscan and Quebec, and 9½ miles in Lake St. Peter, where the dredge *J. I. Tarte* is at work.

In 1884, when the improvements were begun in the channel, there was only a depth of 11 feet in Lake St. Peter. The channel there is, throughout, 27½ feet in depth and 30 feet, as before stated, for 9½ miles of the distance.

The usual careful testing was carried on during last season, and no boulders nor obstructions had been found in the channel during that period. Since operations of improvement by dredging were begun, in the forties, to June 30, 1903, the total quantity of material excavated has amounted to 36,654,660 cubic yards, at a grand total expenditure of $4,910,155.62.

During the year 1903, 802 ocean-going vessels have gone up and down this channel, this number being 45 in excess of that of 1902. The total tonnage has reached the figure of 1,900,000 tons, or 350,000 tons more than in any previous year; the daily tonnage being calculated to be equal to that which would be carried by 80 trains daily.

In the province of Manitoba the dredging appliances which were obtained some years ago, have been found to be behind the times, and improvements are now in progress which will enable the department to carry on the work at less cost and with more rapidity than heretofore.

In British Columbia the new dredges *King Edward* (a hydraulic dredge) and the *Nakusp,* operating on the Arrow lakes have done very satisfactory work, and the department is now taking steps to replace the dredge *Mudlark,* which was purchased some years ago and appears to have outlived her usefulness.

The department hopes that within a short time its equipment in dredging appliances will enable it to cope successfully with the ever increasing demands for that class of work.

TRANSPORTATION.

I may here make a passing note of the commencement of the work of the transportation commission, composed of Messrs. John Bertram, chairman, E. C. Fry, of Quebec, and Robert Reford, of Montreal, with Messrs. C. N. Bell and J. X. Perrault as joint secretaries. The commission, which has set to work and begun its operation by investigating the conditions in the maritime provinces, is following its work by further investigation in the province of Ontario and the west.

PUBLIC BUILDINGS.

Having rapidly gone over the work performed for the advantage of navigation, permit me to refer to another important branch of the department, that which concerns

the construction and maintenance of the public buildings disseminated throughout the Dominion, and which are under the charge of the Department of Public Works.

As I have stated at the beginning of this report, the total expenditure made on buildings has amounted to $1,539,005.60.

This expenditure is spread over 272 buildings in the Dominion, and has covered not only the expenditure for the construction of new edifices, but that required for the maintenance of those already constructed, their repair, heating, ligthing, &c.

During the year 1902-03 the following buildings were either begun or were in course of construction:—

Nova Scotia—

Arichat public building.
Guysboro public building.
Halifax public building.
Middleton armoury.

New Brunswick—

Marysville public building.
Richibucto public building.

Quebec—

Granby public building.
L'Assomption public building.
Quebec Artillery workshops.
Quebec iron foundry.

Ontario—

Clifton public building.
Deseronto public building.
Fort William public building.
Guelph (alterations).
London drill hall (construction).
Ottawa Observatory (construction).
Sarnia (construction).
Toronto, Postal Station C (construction).

North-west Territories—

Carnduff court house.
Edmonton jail.
MacLeod court house.
Saskatoon court house.
Yorkton court house.
Red Deer court house.

British Columbia—

Kamloops armoury.
Kaslo armoury.
Nelson armoury.
Revelstoke armoury.
Nelson public building.
Rossland public building.

Of the above, the following buildings were completed during the year under review: Middleton, Marysville, Granby, Quebec artillery workshops, Deseronto, Carnduff, Saskatoon, and all the buildings above named in British Columbia.

The cost of heating the public buildings throughout the Dominion amounted, during the year, to $114,780.89 ,and that for lighting purposes to $90.051.03.

It has been the aim of the Chief Architect to keep the buildings throughout in as good a state of repair as the grants given by parliament would allow, the several caretakers of those buildings reporting regularly on repairs required, the same being well looked after by the Chief Architect and his efficient staff.

There has been only one casualty to report in connection with the public buildings for the year.. An unfortunate accident occurred in the public building at Springhill, N.S., where, owing to the explosion of the heating furnace, the caretaker was instantly killed and another man, employed by the Robb Engineering Co., of Amherst, was seriously wounded. Fortunately, after having been in the hospital for some time, the latter has recovered from his injuries.

The Chief Architect is now at work preparing the plans for several of the important buildings for which money was granted at the last session of parliament, the most important being certainly the Victoria National Museum at Ottawa, for the construction of which a site has been procured and the plans are well advanced.

TELEGRAPHS.

The telegraph service of the department has been well looked after during the year by the Superintendent of telegraph service. The total number of miles of telegraph lines under the control of the department is 6,244¾ miles, comprising 259 offices, transmitting during the year under review a total of 96,500 messages.

The lines in Yukon territory have been, during the last winter, operated much more satisfactorily than during the previous year, climatic conditions having been more favourable. While during the winter of 1902-3 the line could not be woked for the greater part of the month of January, and only spasmodically during February, there has not been, during the course of last winter, one single day in which, if an interruption occurred, the line was not during the same day in sufficient working condition to enable messages to pass through to Dawson.

The returns for the line during the last fiscal year is about equal to the returns of the preceding year, while the expenditure for maintenance has also been about the same.

Several new lines have been established in the province of Quebec; steps have been taken to substitute a land line in place of the cables between Bersimis and Godbout, where frequent interruptions occurred, and the line on the north shore of the St. Lawrence to Belle Isle has been kept in good and efficient working condition.

This branch of our service has been well administered, and the praise given to the Chief Engineer and the Chief Architect can in no way be diminished when it is addressed to the Superintendent of telegraphs.

In Part No. 2 will be found the financial statement prepared with his usual care and attention by the Accountant, and in No. 6 the interesting report of the Collector of Revenue.

I would also draw special attention to a well written and entertaining report by Mr. A. St. Laurent on the construction under his superintendence of an extensive grain elevator in the harbour of Montreal, which will be found at pages 235 to 251 of Part 4, the Chief Engineer's report.

Before concluding this report, I may say that the review of the work of our department during the twenty years following 1882, to which I referred in last year's report, has been continued with as much rapidity as the abnormal length of last session and the consequent doubling up of work since its close, have permitted me to do. I hope that before the next session of parliament closes, I will be in a position to submit to you a copy of the work in question, which I anticipate will be a credit to the department.

I beg to offer the expression of my utmost satisfaction to all the employees of the department who have assisted in carrying on so successfully the very important works entrusted to them and to myself during the year under review, and I must say that they all deserve the greatest praise for the manner in which they have acquitted themselves of their duties.

I have the honour to be, sir,

Your obedient servant,

A. GOBEIL,

Deputy Minister.

PART II.

STATEMENTS OF EXPENDITURE

DURING

FISCAL YEAR ENDED JUNE 30, 1903.

PART II.

STATEMENT A.—Showing the Amounts expended by the Department of Public Works of Canada during the fiscal year ending June 30, 1903.

Name of Work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	Total.
PUBLIC BUILDINGS.	$ cts.	$ cts.	$ cts.	$ cts.
Nova Scotia.				
Amherst, post office, &c.		269 86		269 86
Annapolis, post office, &c.		854 72		854 72
Antigonish, post office, &c.		25 09		25 09
Arichat, post office, &c.	5,092 82			5,092 82
Baddeck, post office, &c		150 57		150 57
" armoury	1,650 00			1,650 00
Dartmouth, post office, &c.		5 00		5 00
Digby, post office, &c		122 35		122 35
Guysboro, post office, &c.	14,343 52			14,343 52
Halifax Asst. Receiver Gen. Office		27 73		27 73
" Dominion Building		1,643 27		1,643 27
" " " power for elevators			179 20	179 20
" drill hall		396 12		396 12
" engineer's office		32 75		32 75
" examining warehouse		89 54		89 54
" " " power for elevator			77 42	77 42
" immigrant building	336 04	508 26		844 30
" quarantine station (Lawlor's Island)		2,191 63		2,191 63
" new custom house	49,065 92			49,065 92
Kentville, post office, &c.		174 30		174 30
Liverpool, post office, &c.		42 64		42 64
Lunenburg, post office, &c.		61 23		61 23
Middleton armoury	7,043 51			7,043 51
Nappan, experimental farm	10 20	19 98		30 18
New Glasgow, post office, &c		1,041 58		1,041 58
North Sydney, post office, &c.		437 48		437 48
" " quarantine station	1,509 68			1,509 68
Pictou, post office, &c.		2,117 47		2,117 47
Springhill, post office, &c.	2,349 95	231 93		2,581 88
Sydney, post office, &c	1,949 55	108 13		2,057 68
Truro, post office, &c.		989 05		989 05
Windsor, post office, &c		7 98		7 98
Yarmouth, post office, &c		362 26		362 26
Heating, lighting, water, &c., for all buildings in Nova Scotia. (For details see page 22).			30,320 40	30,320 40
Totals, Nova Scotia	83,351 19	11,910 92	30,577 02	125,839 13
Prince Edward Island.				
Charlottetown, Dominion building		627 19	500 00	1,127 19
" marine hospital		6 50		6 50
" quarantine station		538 39		538 39
Montague, post office, &c		21 48		21 48
Summerside, post office, &c		41 77		41 77
Heating, lighting, water, &c., for all buildings in Prince Edward Island. (For details see page 22)			5,830 94	5,830 94
Totals, Prince Edward Island		1,235 33	6,330 94	7,566 27

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	Total.
PUBLIC BUILDINGS—*Continued.*	$ cts.	$ cts.	$ cts.	$ cts.
New Brunswick.				
Bathurst, post office, &c	1,850 00	258 40		2,108 40
Carleton, post office, &c		1,175 50		1,175 50
Chatham, post office, &c		150 48		150 48
Chatham, quarantine station		55 00		55 00
Dalhousie, post office, &c		291 27		291 27
Fredericton, military building	47 98			47 98
" post office, &c		1,201 20		1,201 20
Marysville, post office, &c	9,683 17			9,683 17
Moncton, post office, &c		368 51		368 51
Newcastle, post office, &c		787 38		787 38
Portland (St. John), post office, &c		247 86		247 86
Richibucto, post office, &c	2,995 34			2,995 34
St. John, custom house		1,038 76		1,038 76
" immigration building	10,009 12	311 66		10,320 78
" post office		905 79		905 79
" quarantine station	1,565 87			1,565 87
" savings bank		141 70		141 70
" buildings generally			173 17	173 17
St. Stephens, post office, &c		17 15		17 15
Sussex, armoury	4,249 20			4,249 20
" post office		118 31		118 31
Tracadie Lazaretto		514 01		514 01
Woodstock, post office, &c	500 00	37 53		537 53
Heating, lighting, water, &c., for all buildings in New Brunswick. (For details see page 22)			23,926 96	23,926 96
Totals, New Brunswick	30,900 68	7,620 51	24,100 13	62,621 32
Maritime Provinces.				
Generally			980 08	980 08
Quebec.				
Aylmer, post office		206 84		206 84
Berthierville, post office		400 78		400 78
Buckingham, post office		960 65		960 65
Coaticook, post office, &c		7 75		7 75
Drummondville, post office, &c	1,436 61	53 60		1,490 21
Dundee, custom house		502 94		502 94
Granby, post office, &c	10,987 44			10,987 44
Grosse Isle, quarantine station	10,088 58	2,204 96		12,293 54
Fraserville, post office, &c		73 89		73 89
Hochelaga, post office, &c		826 79		826 79
Hull, post office, &c	1,300 00	375 05		1,675 05
Joliette, post office, &c		66 09		66 09
Lachine, post office, &c		40 75		40 75
Laprairie, post office, &c		484 34		484 34
L'Assomption, post office, &c	4,970 98			4,970 98
Levis, cattle quarantine station		5,417 23		5,417 23
Montmagny, post office, &c		281 69		281 69
Montreal, custom house		4,799 61		4,799 61
" examining warehouse	15,054 14	310 44		15,364 58
" immigration building		125 00		125 00
" inland revenue building		239 29		239 29
" post office	2,157 83	6,414 22		8,572 05
" post office, power for elevators, &c			3,801 15	3,801 15
" public buildings generally			32 60	32 60
Quebec citadel, Governor General's quarters		3,413 49		3,413 49
" clerk of works office		117 50		117 50
" culler's office		31 00		31 00
" custom house		539 77		539 77
Carried forward	45,995 58	27,893 67	3,833 75	77,723 00

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	Total.
PUBLIC BUILDINGS—*Continued.*	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	45,995 58	27,893 67	3,833 75	77,723 00
Quebec—Continued.				
Quebec engineer's office		78 40		78 40
" examining warehouse		450 74		450 74
" immigration building, (Louise Embankment)		3,153 39		3,153 39
" immigration office		124 09		124 09
" King's Wharf building		155 69		155 69
" Military buildings:				
Artillery workshops	16,418 56			16,418 56
Cartridge factory		66 77		66 77
Iron foundry	20,360 46			20,360 46
Quebec, post office		4,302 72		4,302 72
" " power for elevators			300 00	300 00
Peribonka, immigrant shed		72 05		72 05
Richmond, post office, &c		581 89		581 89
Rimouski, "		29 18		29 18
Roberval, immigrant shed		642 35		642 35
Sherbrooke, post office, &c		859 27		859 27
Sorel, post office, &c		607 98		607 98
St. Henri, post office, &c		120 87		120 87
St. Hyacinthe, post office, &c	4,264 54	626 40		4,890 94
St. Jerome, post office, &c		335 00		335 00
St. Johns, post office, &c		106 67		106 67
St. Roch, post office, &c		18 25		18 25
Thetford Mines, post office, &c	2,114 38			2,114 38
Three Rivers, custom house	3,074 60	222 61		3,297 21
" post office		1,982 27		1,982 27
Valleyfield, post office, &c	10,398 60	31 47		10,430 07
Victoriaville, post office, &c		148 25		148 25
West Farnham, post office, &c		36 55		36 55
Public Bldgs Quebec, generally			630 20	630 20
Heating, lighting, water, &c., for all Quebec Buildings. (For details see page 22)			78,522 66	78,522 66
Totals, Quebec	102,626 72	42,646 53	83,286 61	228,559 86
Ontario.				
Almonte, post office, &c		90 48		90 48
Amherstburg, post office, &c		90 40		90 40
Arnprior, post office, &c		269 95		269 95
Barrie, post office, &c		255 50		255 50
Belleville, post office, &c	776 86	417 54		1,194 40
Berlin, post office, &c	365 16	82 52		447 68
Bowmanville, post office, &c	5,000 00			5,000 00
Brampton, post office, &c		251 11		251 11
Brantford, drill hall		45 90		45 90
" post office, &c		144 60		144 60
Brockville, drill hall	4,640 00			4,640 00
" post office, &c		589 07		589 07
Carleton Place, post office, &c		99 49		99 49
Cayuga, post office, &c		44 72		44 72
Chatham, post office, &c		310 66		310 66
Clinton, post office, &c	7,538 75			7,538 75
Cobourg, armoury	4,000 10			4,000 10
" post office, &c		549 87		549 87
Cordova Mines, post office, &c		15 00		15 00
Cornwall, post office, &c		226 45		226 45
Deseronto, post office, &c	20,513 83			20,513 83
Dundas, drill hall	67 39			67 39
Fort William, post office, &c	4,999 82			4,999 82
Carried forward	47,901 91	3,483 26		51,385 17

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	Total.
PUBLIC BUILDINGS—*Continued.*	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	47,901 91	3,483 26		51,385 17
Ontario—Continued.				
Galt, post office, &c		83 31		83 31
Gananoque, post office, &c		217 20		217 20
Goderich, post office, &c		105 60		105 60
Guelph, post office, &c	7,054 63	78 11		7,132 74
Hamilton, custom house		213 25		213 25
Hamilton examining warehouse	9,893 32			9,893 32
" post office		554 82		554 82
" power			18 77	18 77
Ingersoll post office, &c		40 95		40 95
Kingston custom house		575 73		575 73
" military college, &c	39,680 45			39,680 45
" post office, &c	674 22	389 82		1,064 04
Lindsay post office		16 96		16 96
London custom house	341 65	463 24		804 89
" drill hall	9,937 73			9,937 73
" post office, &c	355 80	351 66		707 46
Napanee "		71 37		71 37
Niagara Falls "	387 00			387 00
Orangeville "		35 45		35 45
Orillia "		47 59		47 59
Ottawa parliamentary and deptl. buildings:				
Astronomical observatory	15,018 72			15,018 72
Bacteriological laboratory	6,762 88			6,762 88
Experimental farm	5,157 94	2,769 05		7,926 99
Major's Hill Park		6,908 44		6,908 44
National Art Gallery	6,500 00	807 42		7,307 42
Parliament buildings	26,180 06			26,180 06
Post office, &c	27,000 00			27,000 00
Rideau Hall	7,514 43	21,753 71		29,268 14
" grounds, $7,381.33; snow, $944.42; fuel and light, $8,000; watchman, $547.50			16,873 30	16,873 30
Royal Mint	1,065 02			1,065 02
Generally: grounds			9,350 36	9,350 36
" power for elevators			2,824 80	2,824 80
" removal of snow			2,075 62	2,075 62
" repairs and furniture		167,500 92		167,500 92
" telephone service			6,999 37	6,999 37
Paris, post office, &c		78 12		78 12
Pembroke, post office, &c		50 40		50 40
Peterborough, custom house		22 50		22 50
" post office, &c		117 32		117 32
Petrolea, post office, &c		181 97		181 97
Picton "	4,175 82	87 61		4,263 43
Port Arthur, immigrant building		89 44		89 44
" post office, &c		20 20		20 20
Port Colborne "	695 24	222 59		917 83
Port Dalhousie, custom house		36 00		36 00
Port Hope, post office, &c		1,143 30		1,143 30
Prescott "	1,454 85	213 78		1,668 63
Rat Portage "		98 11		98 11
St. Catharines "		191 77		191 77
St. Thomas, armoury	1,873 99			1,873 99
" post office, &c		232 06		232 06
Sarnia "	34,011 02			34,011 02
Sault Ste. Marie "	164 42			164 42
Smith's Falls "		39 51		39 51
Stratford "		34 55		34 55
Strathroy "		179 75		179 75
Carried forward	253,801 10	209,506 84	38,142 22	501,450

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	Total.
PUBLIC BUILDINGS—*Continued.*	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	253,801 10	209,806 84	38,142 22	501,450 16
Ontario—Continued.				
Toronto, asst. receiver general's office	1,565 46			1,565 46
" custom house		5,197 04		5,197 04
" drill shed		5,990 51		5,990 51
" engineer's office		13 60		13 60
" examining warehouse		1,276 11		1,276 11
" generally			1,028 85	1,028 85
" inland revenue		273 24		273 24
" Junction building	2,902 98			2,902 98
" postal station 'C'	28,108 45			28,108 45
" post office, &c	1,285 00	14,523 26		15,808 26
" power			445 68	445 68
" Union Station, bal	146 16			146 16
Trenton post office, &c		406 43		406 43
Walkerton post office, &c		223 92		223 92
Windsor drill hall	6 63			6 63
" post office, &c	3,794 95	157 43		3,952 38
Woodstock drill hall	28 54			28 54
" post office, &c	934 60	258 23		1,192 83
Ontario generally			160 50	160 50
Heating, lighting, water, &c., for all buildings in Ontario (For details see page 23)			239,073 37	239,073,37
Totals, Ontario	292,573 87	237,826 61	278,850 62	809,251 10
Manitoba.				
Birtle immigrant building		10 00		10 00
Brandon experimental farm		497 72		497 72
" immigrant building		23 04		23 04
" post office, &c		324 92		324 92
Dauphin drill hall		8 00		8 00
" immigrant building		28 00		28 00
Portage LaPrairie post office, &c		494 67		494 67
Selkirk (east) immigrant building		515 45		515 45
Winnipeg custom house		250 18		250 18
" Dominion lands office		185 98		185 98
" drill shed		3 00		3 00
" examining warehouse		2,624 17		2,624 17
" immigrant buildings	12,211 51	2,156 85		14,368 36
" post office, &c		3,003 29		3,003 29
" power			100 17	100 17
" weights and measures office		57 25		57 25
Manitoba generally			368 05	368 05
Heating, lighting, water, &c., for all buildings in Manitoba (For details see page 25)			19,586 79	19,586 79
Totals, Manitoba	12,211 51	10,182 52	20,055 01	42,449 04
North-west Territories.				
Battleford Dominion lands office		231 00		231 00
Calgary court house, &c	380 12	997 30		1,377 42
" custom "		84 13		84 13
" immigrant building		199 74		199 74
" post office, &c		1,385 35		1,385 35
Carnduff court house	5,839 45			5,839 45
Edmonton court house	2,748 31	879 87		3,628 18
" Dominion lands office		172 27		172 27
" post office		87 45		87 45
Carried forward	8,967 88	4,037 11		13,004 99

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	Total.
PUBLIC BUILDINGS.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	8,967 88	4,037 11		13,004 99
North-west Territories—Concluded.				
Indian Head experimental farm		1,162 33		1,162 33
Lacombe immigrant building		32 25		32 25
Lethbridge court house, &c	1,497 14	41 75		1,538 89
" immigrant building		54 75		54 75
" post office		3 00		3 00
Macleod court house, &c	12,078 42			12,078 42
" custom house	1,047 00	352 90		1,399 90
Medecine Hat court house		167 20		167 20
Moosejaw " "	861 48	58 60		920 08
Moosomin " "	1,084 02	187 50		1,271 52
Prince Albert " "		366 85		366 85
" Dominion lands office, &c		386 48		386 48
" immigrant building		69 25		69 25
Qu'Appelle " "		2 50		2 50
Red Deer court house, &c	916 15			916 15
Red Deer Valley immigrant building	16 70			16 70
Regina court house	764 33	329 56		1,093 89
" Dominion lands office, &c		298 98		298 98
" Lt. Governor's residence	2,320 50	476 40		2,796 90
" post office, &c		175 72		175 72
St. Mary court house		8 00		8 00
Saskatoon immigrant building	2,817 45			2,817 45
Strathcona " "		210 60		210 60
Wolseley court house &c		333 18		333 18
Yorkton " "	7,452 25			7,452 25
" Dominion lands office		165 50		165 50
" immigrant building		139 10		139 10
North-west Territories generally			220 80	220 80
Heating, lighting, water, &c., for all buildings in North-west Territories (For details see page 26)			18,145 06	18,145 06
Totals, N.-W. Territories	39,823 32	9,059 51	18,365 86	67,248 69
British Columbia.				
Agassiz, experimental farm		379 70		379 70
Atlin post office, &c		381 61		381 61
Kamloops armoury	7,908 15			7,908 15
" post office, &c		1,182 01		1,182 01
Kaslo, armoury	4,253 59			4,253 59
Nanaimo, post office		993 30		993 30
Nelson, armoury	12,175 14			12,175 14
" post office, &c	25,031 60			25,031 60
New Westminster, crown and timber office		855 60		855 60
" custom house, &c		146 06		146 06
" Dominion lands office		721 30		721 30
" post office, &c		857 42		857 42
Revelstoke, armoury	6,618 89			6,618 89
Rossland, post office, &c	12,047 17			12,047 17
Vancouver, drill hall		594 10		594 10
" examining warehouse		611 18		611 18
" post office, &c	3,788 45	1,060 80		4,849 25
Victoria, drill hall		16 00		16 00
" Indian office		43 22		43 22
" post office, &c		3,883 19		3,883 19
" power			252 72	252 72
William's Head, quarantine station		15,000 00	360 00	15,360 00
British Columbia, generally			1,163 25	1,163 25
Carried forward	71,822 99	26,725 49	1,775 97	100,324 45

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Construction and Improvements.	Repairs and Furniture	Staff and Maintenance.	Total.
PUBLIC BUILDINGS—*Concluded.*	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	71,822 99	26,725 49	1,775 97	100,324 45
British Columbia—Concluded.				
Heating, lighting, water, &c., for all buildings in British Columbia. (For details see page 26)			22,634 07	22,634 07
Totals, British Columbia	71,822 99	26,725 49	24,410 04	122,958 52
Yukon District.				
Yukon, public buildings	8,999 04			8,999 04
Heating, lighting, &c., for Yukon buildings			44,453 27	44,453 27
Totals, Yukon District	8,999 04		44,453 27	53,452 31
Public buildings generally.				
Printing, stationery, advertising, &c			6,143 74	6,143 74
Salaries of resident clerks of works, &c			11,935 54	11,935 54
Totals, generally			18,079 28	18,079 28

PART II—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
HARBOURS AND RIVERS.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Nova Scotia.					
Amaguadees Pond wharf		485 60			485 60
Arisaig, repairs to pier			899 81		899 81
Back Bay			75 76		75 76
Bailey Brook		2,000 00			2,000 00
Bass River			56 06		56 06
Burnt Church			4 95		4 95
Bear River			1,611 35		1,611 35
Big Pond			84 79		84 79
Boularderie		2,499 79			2,499 79
Brooklyn wharf		556 09			556 09
Burlington wharf		1,590 79			1,590 79
Canada Creek breakwater		499 96			499 96
Cape Cove		3,000 00			3,000 00
Cape Auget		912 83			912 83
Cariboo Island		650 06			650 06
Chegoggin			76 58		76 58
Cheticamp		123 38			123 38
Charlesville breakwater		2,700 20			2,700 20
Cheverie "		2,999 34			2,999 34
Church Point			1,800 00		1,800 00
Comeau breakwater		1,202 37			1,202 37
Comeau's Hill breakwater		599 72			599 72
Comeauville			1,998 49		1,998 49
Cow Bay (Port Morien)			10,005 00		10,005 00
Cribbin's Point			1,357 87		1,357 87
Digby	765 07		3,697 77		4,462 84
" "Racquette" hand dredging	496 38				496 38
Drumhead breakwater		638 76			638 76
Eagle Head			148 03		148 03
East Bay (North Side)			600 00		600 00
East-Berlin breakwater		1,999 94			1,999 94
Ecum Secum wharf			127 86		127 86
Englishtown "			32 05		32 05
Faulkner's Creek			100 24		100 24
Finlay's Point wharf		529 78			529 78
Fort Lawrence, landing pier		109 16			109 16
French River			391 82		391 82
Friars' Head, boat harbour		629 96			629 96
Granville Centre, wharf		857 00			857 00
Grand Narrows, repairs to wharf			1,300 66		1,300 66
Grand Etang		1,020 00			1,020 00
Green Cove		91 18			91 18
Gros Nez, repair to breakwater			384 51		384 51
Halifax graving dock				10,000 00	10,000 00
Hampton			207 63		207 63
Hawk Point inlet		215 71			215 71
Herring Cove		3,820 05	35 00		3,855 05
Hunts Point breakwater			449 41		449 41
Iona wharf		3,194 10			3,194 10
Indian Brook Flats, Cape Sable Isl. w'f.		2,648 81			2,648 81
Ingonish (North Bay)		1,515 52			1,515 52
Irish Cove, repairs to wharf			499 96		499 96
Island Point " "			513 37		513 37
Isaac's Harbour			723 19		723 19
Judique, repair, &c., to breakwater			898 77		898 77
Kempt Head		719 56			719 56
Kingsport		4,934 60			4,934 60
L'Ardoise, breakwater		25 57			25 57
Larrys River "		749 81			749 81
Lennox passage		999 90			999 90
Lingan, beach protection		599 89			599 89
Little Bras d'Or wharf		2,287 50			2,287 50
Carried forward	1,261 45	47,406 93	28,080 93	10,000 00	86,749 31

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
HARBOURS AND RIVERS—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	1,261 45	47,406 93	28,080 93	10,000 00	86,749 31
Nova Scotia—Con.					
Little Harbour, (or Arnold Point)		138 68			138 68
Little Narrows			499 04		499 04
Liverpool	12,225 55				12,225 55
Livingstone's Cove		1,519 51			1,519 51
Lower Cove, breakwater		1,301 86			1,301 86
Lower West Pubnico		1,000 00			1,000 00
McNairs Cove		1,094 58			1,094 58
Mabou Harbour			1,198 71		1,198 71
Main à Dieu		103 60			103 60
Maitland—repairs to wharf			1,398 61		1,398 61
Malignant Cove		799 94			799 94
Margaree Harbour		482 32			482 32
Margaree Island			6 40		6 40
Meteghan (Cove)		2,999 47			2,999 47
Meteghan River		942 41			942 41
Minudie Wharf		1,310 51			1,310 51
Monk's Head			139 07		139 07
Necum Teuch wharf		790 13			790 13
Neils Harbour, breakwater		13,892 50			13,892 50
New Harbour, breakwater, &c		5,999 77			5,999 77
North River, St. Anns			45 88		45 88
North Sydney	4,839 40				4,839 40
Nyanza Wharf			257 79		257 79
Ogdens Pond		649 87			649 87
Parker's Cove		10,212 60			10,212 60
Parrsborough			10 62		10 62
Pereaux, landing pier		1,329 96			1,329 96
Petit de Grat			90 91		90 91
Pictou Island	7,087 07		942 56		8,029 63
Pinkney's Cove			48 69		48 69
Plymouth			97 38		97 38
Poirierville or Lower d'Escousse		438 96			438 96
Porters Lake		2,455 67			2,455 67
Port George breakwater		2,297 46			2,297 46
Port Greville		4,071 10			4,071 10
Port Hawkesbury		2,718 01			2,718 01
Port Hood			199 99		199 99
Port La Tour		1,009 94			1,009 94
Port Larue			1,198 48		1,198 48
Prospect		767 26			767 26
Ragged Head, Channel protection		1,000 00			1,000 00
Round Bay		2,326 81			2,326 81
Sandford or Cranberry Head, breakwater		1,004 47			1,004 47
Sandy Cove, breakwater		2,510 51			2,510 51
Shag Harbour			21 05		21 05
Short Beach		1,773 10			1,773 10
Sonora	2,204 33				2,204 33
Sober Island		797 18			797 18
South Gut, St. Ann's			1,248 12		1,248 12
South Ingonish wharf		60 37			60 37
South West,—Port Mouton			1,500 00		1,500 00
St. Ann's Beach, protection work		1,749 89			1,749 89
St. Mary's River (Guysborough)	4,135 51				4,135 51
Summerville breakwater		999 69			999 69
Three Fathom Harbour		1,785 57			1,785 57
The Gate. Improvements of Channel between Comeaux Hill Point and Big Tusket Island		1,000 00			1,000 00
Tidnish			1,066 13		1,066 13
Tiverton		2,518 16			2,518 16
Carried forward	31,753 31	123,258 79	38,050 36	10,000 00	203,062 46

PART II—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
HARBOURS AND RIVERS.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Nova Scotia.					
Amaguadees Pond wharf		485 60			485 60
Arisaig, repairs to pier			899 81		899 81
Back Bay			75 76		75 76
Bailey Brook		2,000 00			2,000 00
Bass River			56 06		56 06
Burnt Church			4 95		4 95
Bear River			1,611 35		1,611 35
Big Pond			84 79		84 79
Boularderie		2,499 79			2,499 79
Brooklyn wharf		556 09			556 09
Burlington wharf		1,590 79			1,590 79
Canada Creek breakwater		499 96			499 96
Cape Cove		3,000 00			3,000 00
Cape Auget		912 83			912 83
Cariboo Island		650 06			650 06
Chegoggin			76 58		76 58
Cheticamp		123 38			123 38
Charlesville breakwater		2,700 20			2,700 20
Cheverie "		2,999 34			2,999 34
Church Point			1,800 00		1,800 00
Comeau breakwater		1,202 37			1,202 37
Comeau's Hill breakwater		599 72			599 72
Comeauville			1,998 49		1,998 49
Cow Bay (Port Morien)			10,005 00		10,005 00
Cribbin's Point			1,357 87		1,357 87
Digby	765 07		3,697 77		4,462 84
" "Racquette" hand dredging	496 38				496 38
Drumhead breakwater		638 76			638 76
Eagle Head			148 03		148 03
East Bay (North Side)			600 00		600 00
East-Berlin breakwater		1,999 94			1,999 94
Ecum Secum wharf			127 86		127 86
Englishtown "			32 05		32 05
Faulkner's Creek			100 24		100 24
Finlay's Point wharf		529 78			529 78
Fort Lawrence, landing pier		109 16			109 16
French River			391 82		391 82
Friars' Head, boat harbour		629 96			629 96
Granville Centre, wharf		857 00			857 00
Grand Narrows, repairs to wharf			1,300 66		1,300 66
Grand Etang		1,020 00			1,020 00
Green Cove		91 18			91 18
Gros Nez, repair to breakwater			384 51		384 51
Halifax graving dock				10,000 00	10,000 00
Hampton			207 63		207 63
Hawk Point inlet		215 71			215 71
Herring Cove		3,820 05	35 00		3,855 05
Hunts Point breakwater			449 41		449 41
Iona wharf		3,194 10			3,194 10
Indian Brook Flats, Cape Sable Isl. w'f.		2,648 81			2,648 81
Ingonish (North Bay)		1,515 52			1,515 52
Irish Cove, repairs to wharf			499 96		499 96
Island Point " "			513 37		513 37
Isaac's Harbour			723 19		723 19
Judique, repair, &c., to breakwater			898 77		898 77
Kempt Head		719 56			719 56
Kingsport		4,934 60			4,934 60
L'Ardoise, breakwater		25 57			25 57
Larrys River "		749 81			749 81
Lennox passage		999 90			999 90
Lingan, beach protection		599 89			599 89
Little Bras d'Or wharf		2,287 50			2,287 50
Carried forward	1,261 45	47,406 93	28,080 93	10,000 00	86,749 31

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
HARBOURS AND RIVERS—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	1,261 45	47,406 93	28,080 93	10,000 00	86,749 31
Nova Scotia—Con.					
Little Harbour, (or Arnold Point)		138 68			138 68
Little Narrows			499 04		499 04
Liverpool	12,225 55				12,225 55
Livingstone's Cove		1,519 51			1,519 51
Lower Cove, breakwater		1,301 86			1,301 86
Lower West Pubnico		1,000 00			1,000 00
McNairs Cove		1,094 58			1,094 58
Mabou Harbour			1,198 71		1,198 71
Main à Dieu		103 60			103 60
Maitland—repairs to wharf			1,398 61		1,398 61
Malignant Cove		799 94			799 94
Margaree Harbour		482 32			482 32
Margaree Island			6 40		6 40
Meteghan (Cove)		2,999 47			2,999 47
Meteghan River		942 41			942 41
Minudie Wharf		1,310 51			1,310 51
Monk's Head			139 07		139 07
Necum Teuch wharf		790 13			790 13
Neils Harbour, breakwater		13,892 50			13,892 50
New Harbour, breakwater, &c		5,999 77			5,999 77
North River, St. Anns			45 88		45 88
North Sydney	4,839 40				4,839 40
Nyanza Wharf			257 79		257 79
Ogdens Pond		649 87			649 87
Parker's Cove		10,212 60			10,212 60
Parrsborough			10 62		10 62
Pereaux, landing pier		1,329 96			1,329 96
Petit de Grat			90 91		90 91
Pictou Island	7,087 07		942 56		8,029 63
Pinkney's Cove			48 69		48 69
Plymouth			97 38		97 38
Poirierville or Lower d'Escousse		438 96			438 96
Porters Lake		2,455 67			2,455 67
Port George breakwater		2,297 46			2,297 46
Port Greville		4,071 10			4,071 10
Port Hawkesbury		2,718 01			2,718 01
Port Hood			199 99		199 99
Port La Tour		1,009 94			1,009 94
Port Larue			1,198 48		1,198 48
Prospect		767 26			767 26
Ragged Head, Channel protection		1,000 00			1,000 00
Round Bay		2,326 81			2,326 81
Sandford or Cranberry Head, breakwater		1,004 47			1,004 47
Sandy Cove, breakwater		2,510 51			2,510 51
Shag Harbour			21 05		21 05
Short Beach		1,773 10			1,773 10
Sonora	2,204 33				2,204 33
Sober Island		797 18			797 18
South Gut, St. Ann's			1,248 12		1,248 12
South Ingonish wharf		60 37			60 37
South West,—Port Mouton			1,500 00		1,500 00
St. Ann's Beach, protection work		1,749 89			1,749 89
St. Mary's River (Guysborough)	4,135 51				4,135 51
Summerville breakwater		999 69			999 69
Three Fathom Harbour		1,785 57			1,785 57
The Gate. Improvements of Channel between Comeaux Hill Point and Big Tusket Island		1,000 00			1,000 00
Tidnish			1,066 13		1,066 13
Tiverton		2,518 16			2,518 16
Carried forward	31,753 31	123,258 79	38,050 36	10,000 00	203,062 46

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
HARBOURS AND RIVERS—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	31,753 31	123,258 79	38,050 36	10,000 00	203,062 46
Nova Scotia—Con.					
Tracadie East			381 64		381 64
Tusket Wharf		580 08			580 08
Victoria Pier			653 53		653 53
Washabuck Wharf		182 92			182 92
Wedge Point			1,000 00		1,000 00
West Baccaro		2,000 00			2,000 00
West Bay, Richmond (South Side)			134 26		134 26
Western Head		2,958 55			2,958 55
Whitewater			881 98		881 98
Whitehaven			799 25		799 25
Whycocomagh			450 00		450 00
Yarmouth Bar			120 94		120 94
Generally, Nova Scotia				3,480 22	3,480 22
Totals, Nova Scotia	31,753 31	128,980 34	42,471 96	13,480 22	216,685 83
Prince Edward Island.					
Bay Fortune breakwater			999 84		999 84
Belfast Pier			10 00		10 00
Blooming Point			41 75		41 75
Brae Breakwater			388 25		388 25
Campbell's Cove		799 24			799 24
Canoe Cove		3,172 39			3,172 39
Cascumpec Harbour		1,904 76			1,904 76
Chapel Point			1,099 25		1,099 25
Cove Head Harbour		1,289 40			1,289 40
Cranberry Pier			1,126 77		1,126 77
Crapaud			199 13		199 13
Gaspereau		500 00			500 00
Georgetown Pier			4,405 26		4,405 26
Halliday's Wharf (Queen's Co)	1,524 24				1,524 24
Hickey's Pier			253 12		253 12
Lamberts Pier			99 70		99 66
Lewis Point			100 06		100 06
Lower Montague (Aitkin's Whf)		2,163 99			2,163 99
Miminigash	181 26		501 79		683 05
Montague Bridge	10,444 38				10,444 38
Morrison's Beach			399 86		399 86
Murray Harbour South	508 30				508 30
Murray River	1,823 11				1,823 11
" " (Railway)	1,860 20				
Less refun'd by P.E.I. Railway	1,800 00	60 20			60 20
New London			745 93		745 93
Pownall Pier			954 64		954 64
Red Point, repairs to wharf			1,100 80		1,100 80
Rustico			108 26		108 26
Skinners Pond			30 00		30 00
St. Mary's Bay			549 85		549 85
Stephen's Pier			99 69		99 69
St. Peters Bay breakwater		1,108 81			1,108 81
Souris, Knight's Point		19,680 12			19,680 12
Tignish, rebuilding northern breakwater		732 41			732 41
Wood Islands		3,008 16			3,008 16
Harbours generally (P.E.I)				1,075 85	1,075 85
Totals P. E. Island	14,541 49	34,359 28	13,213 95	1,075 85	63,190 57

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
HARBOURS AND RIVERS.—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
New Brunswick					
Anderson's Hollow			5,747 52		5,747 52
Bathurst		1,069 29			1,069 29
Bay du Vin, wharf		4,004 95			4,004 95
Black Brook (Loggieville)		1,007 42			1,007 42
Campbellton wharf		226 50			226 50
Campobello (Wilson's Beach)		4,004 84			4,004 84
Cape Tormentine	9,004 92		14,788 21		23,793 13
Caraquet wharf		5,627 34			5,627 34
Chockfish River		1,839 70			1,839 70
Clifton (Stonehaven)		2,500 00			2,500 00
Dipper Harbour			5 97		5 97
Dorchester, Coles Point		23,233 62			23,233 62
Grande Anse		4,586 98			4,586 98
Grand Lake Flats	6,955 36				6,955 36
Hopewell Cape		16,500 69			16,500 69
Hopewell Hill			504 93		504 93
Little Salmon River		799 48			799 48
Lord's Cove—Deer Island		999 97			999 97
Mizonette			697 61		697 61
Mispec Harbour		1,182 73			1,182 73
Neguac			4,419 06		4,419 06
Partridge Island (St. John)		1,250 01	52 00		1,302 01
Pointe du Chêne	6,982 81		499 47		7,482 28
Quaco			673 34		673 34
Red Store wharf			700 00		700 00
Richibucto		16,555 25			16,555 25
River St. John, Chapel Bar (York Co.).	2,209 96				2,209 96
" Russell Bar "	7,832 63				7,832 63
River St. John, including tributaries—					
Grand Falls $ 1,716 84					
Green River 287 09					
St. Francis 200 00					
Serpentine 400 00					
Tobique 300 00					
Upper St. John 1,609 22					
		4,513 15			4,513 15
River St. John (wharf at Oromocto)		379 54			379 54
St. Andrews, repairs to wharf			799 62		799 62
St. John Harbour (Negro Point b'water)		20,067 29			20,067 29
St. John Harbour and protection work at base of Fort Dufferin			2,039 63		2,039 63
St. Louis			417 83		417 83
St. George			75 00		75 00
St. Mary's pier			198 96		198 96
Salmon River (Queen's Co.)	3,209 72				3,209 72
Shippegan Harbour			1,999 76		1,999 76
Shippegan, wharf at Lameque		5,904 84			5,904 84
Upper Salmon River (Alma Pier)		555 43			555 43
Generally				3,480 21	3,480 21
Totals, New Brunswick	36,195 40	116,869 02	33,618 91	3,480 21	190,103 54
Quebec.					
Anse à Beaufils		476 12			476 12
Anse St. Jean			657 91		657 91
Ashouapmouchouan				65 22	65 22
Bekeil wharf			553 00		553 00
Boucherville	2,154 35		880 55		3,034 90
Baie St. Paul, repairs to wharf at Cap aux Corbeaux			1,806 44		1,806 44
Baie St-Paul, isolated block			395 69		395 69
Carried forward	2,154 35	476 12	4,293 59	65 22	6,989 28

PART II.—STATEMENT A.—EXPENDITURE—*Continued*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
HARBOURS AND RIVERS.—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	2,154 35	476 12	4,293 59	65 22	6,989 28
Quebec—Con.					
Berthier (en haut)		1,354 32			1,354 32
Bic, addition and improvements to wharf		990 15			990 15
Bic, Pier at Pointe à Côté, &c		53 63			53 63
Cacouna			1,313 60		1,313 60
Cap à l'Aigle		34 75			34 75
Cap de la Madeline			841 02		841 02
Cap Santé			221 60		221 60
Carleton			509 20		509 20
Chicoutimi			8 00		8 00
Cross Point		4,999 47			4,999 47
Coteau Landing	7,293 15		213 48		7,506 63
Côte Ste. Catherine			493 50		493 50
Crane Island, North Side		2,533 62			2,533 62
" " South Side			4,697 53		4,697 53
Doucets Landing	1,677 50				1,677 50
Eboulements wharf			1,960 80		1,960 80
Father Point, landing pier		22,355 85			22,355 85
Graham wharf	1,065 78		317 00		1,382 78
Grande Décharge				17 39	17 39
Grande Vallée, pier		7,468 52			7,468 52
Grandes Bergeronnes			226 92		226 92
Green Shoals	53 88				53 88
Grenville	1,068 96				1,068 96
Grosse Isle, upper wharf			158 33		158 33
Hudson wharf		1,098 90			1,098 90
Hull, wharf		3,207 05	1,411 43		4,618 48
Isle aux Coudres		4,340 32			4,340 32
Isle Grosbois		5,150 75			5,150 75
Isle Verte			1,467 09		1,467 09
Kamouraska			160 30		160 30
Lake St. John, wharfs			1,800 76		1,800 76
Lake Temiscamingue		4,123 33			4,123 33
Lachine	905 00				905 00
Lanoraie			64 18		64 18
Lake St-Louis	964 09				964 09
Laprairie		4,997 08			4,997 08
Lavaltrie	2,650 00				2,650 00
Levis graving dock				13,062 53	13,062 53
Les Ecureuils			746 04		746 04
Le Tableau, Descente des Femmes, wharf on River Saguenay		4,992 54			4,992 54
L'Isle d'Alma, removal of rock		1,209 26			1,209 26
L'Islet			599 11		599 11
Longueuil			1,123 33		1,123 33
Lotbinière		2,369 42			2,369 42
Lower St. Lawrence, removal of rocks—					
Baie St. Paul $ 1 76					
Grandes Bergeronnes 422 07					
Indian Cove 18 00					
Petite Rivière Ste. Anne. 128 36					
Les Escoumains 592 17					
Generally 28 82					
		1,191 18			1,191 18
Magdalen Islands, breakwaters—					
Amherst $11,798 23					
Grand Entry 82 06					
Grindstone 10,674 30					
House Harbour 64 25					
Pointe à Elie 7,787 05					
Generally 680 31					
		31,086 20			31,086 20
Carried forward	17,832 71	104,032 46	22,626 81	13,145 14	157,637 12

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
HARBOURS AND RIVERS—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	17,832 71	104,032 46	22,626 81	13,145 14	157,637 12
Quebec—Con.					
Maria, isolated block		11,991 13			11,991 13
Matane			9 00		9 00
Mistassini				119 56	119 56
Montreal Harbour		251,320 47			251,320 47
Murray Bay		1,599 89			1,599 89
New Carlisle			67 00		67 00
Newport breakwater		224 86			224 86
Nicolet River	3,999 27				3,999 27
Ottawa River (Blanche shoals)	8,037 21				8,037 21
Papineauville	1,144 00				1,144 00
Perce wharf (North Cove)		4,945 02			4,945 02
Peribonka				28 26	28 26
Philipsburg			580 67		580 67
Pierreville	2,839 21				2,839 21
Pointe aux Esquimaux		1,598 17			1,598 17
Pointe Claire	3,925 50		150 00		4,075 50
Pointe Fortune		5,036 51			5,036 51
Pointe St. Pierre, breakwater		3,735 35			3,735 35
Port Daniel			200 00		200 00
Quebec Harbour, improvements		18,831 65			18,831 65
Rimouski wharf			1,323 32		1,323 32
River St. Lawrence, Ship Channel		496,634 35			496,634 35
" aux Renards		282 54			282 54
" Bastican	9,826 14				9,826 14
" Blanche			750 00		750 00
Rivière Cap Chatte			2 47		2 47
" du Nord (St. Andrews)	4,785 07				4,785 07
" Châteauguay	5,002 30				5,002 30
" du Lièvre			520 70	945 11	1,465 81
" des Vases		508 05			508 05
" du Loup			2,969 21		2,969 21
" Jesus	1,020 00				1,020 00
" Noire			247 96		247 96
" St. Francis, ice Pier at Richmond		5,832 84			5,832 84
River St. Maurice Channel, between Grandes Piles and La Tuque		8,000 04			8,000 04
Rivière St. Maurice, Mouth	6,552 50				6,552 50
" Saguenay, beacons				12 50	12 50
" Touladie		47 35			47 35
Roberval	2,531 45	4,596 68			7,128 13
Ruisseau le Blanc, breakwater		21,077 29			21,077 29
Ste. Adelaïde de Pabos			2,925 47		2,925 47
St. Alexis, Baie des Ha Ha, pier		3,994 71			3,994 71
St. Alphonse de Bagotville			1,499 65		1,499 65
St. André de Kamouraska		999 88			999 88
Ste. Anne de Belleville			4 35		4 35
Ste. Anne de la Pocatière			70 15		70 15
Ste. Anne de la Pérade			48 00		48 00
Ste. Anne du Saguenay, wharf		1,339 07			1,339 07
Ste. Emélie			106 51		106 51
Ste. Famille, I. O		4,402 14			4,402 14
St. Francois, b'kwater, south shore, I.O.		4,575 89	341 66		4,917 55
St. Fulgence		747 86			747 86
Ste. Geneviève			136 45		136 45
St. Irénée, wharf		6,340 25			6,340 25
St. Jean, I. O			110 26		110 26
" Port Joli			818 72		818 72
St. Jérôme (Lake St. John, wharf)		2,908 48			2,908 48
St. Johns	2,742 52				2,742 52
St. Lambert			500 09		500 09
Carried forward	70,237 88	965,602 93	36,008 45	14,250 57	1,086,099 83

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
HARBOURS AND RIVERS—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	$ cts
Brought forward	70,237 88	965,602 93	36,008 45	14,250 57	1,086,099 83
Quebec—Con.					
St. Laurent, I. O.			19,370 32		19,370 32
St. Louis, head gates				130 00	130 00
St. Marc, wharf.			99 45		99 45
St. Mathias wharf		2,497 26			2,497 26
St. Michel de Bellechasse			3,997 03		3,997 03
St. Nicholas		7,407 83			7,407 83
St. Nicholas, Island	4,961 69				4,961 69
St. Siméon			598 92		598 92
St. Sulpice			9 00		9 00
St. Zotique.			203 12		203 12
Sorel—deep water wharf		132,661 81			132,661 81
Tadousac, wharf repairing			1,062 10		1,062 10
" extension and repairs to dam of fishbreeding establishment			928 42		928 42
Témiscouata lake (Notre Dame du Lac).			1,124 97		1,124 97
Three Rivers harbour		49,914 21			49,914 21
Valleyfield	6,446 00				6,446 00
Yamaska, dam			2,022 77		2,022 77
" lock			109 07	1,010 48	1,119 55
Generally	2,948 12		5,541 65		8,489 77
Totals, Quebec	84,593 69	1,158,084 04	71,075 27	15,391 05	1,329,144 05
Ontario.					
Algoma Mills	2,216 00				2,216 00
Barrie		1,165 30			1,165 30
Big Bay, North Keppel wharf.			467 94		467 94
Bayfield		366 55			366 55
Blind River, wharf.		5,364 54			5,364 54
Bowmanville	1,648 25		4,009 05		5,657 30
Bronte		3,050 01			3,050 01
Bruce Mines	5,159 00		60 00		5,219 00
Burke's Falls		4,497 74			4,497 74
Burlington Channel			43,169 88	2,123 80	45,293 68
Calendar			1,459 47		1,459 47
Chantry Island			3,300 00		3,300 00
Cobourg	3,293 31		7,146 76		10,440 07
Collingwood	85,129 24				85,129 24
Cornwall			4,801 92		4,801 92
Depot Harbour, breakwater		30,919 89			30,919 89
Gananoque	3,326 35				3,326 35
Goderich	17,776 59		5,979 80		23,756 39
Haileybury, Lake Témiscamingue		3,573 98			3,573 98
Harwood Wharf, Rice Lake		999 40			999 40
Hawkesbury	6,495 82				6,495 82
Hawkestone			150 89		150 89
Hilton, St. Joseph's Island			1,499 81		1,499 81
Huntsville.		3,396 03			3,396 03
Kincardine			4,036 71		4,036 71
Kingston, harbour.	1,268 40				1,268 40
" graving dock			5 25	5,030 57	5,035 82
Kingsville	1,330 72	8,983 23			10,313 95
Lancaster			377 01		377 01
Meaford		25,157 12			25,157 12
Midland	23,759 44				23,759 44
Narrows between Lake Simcoe and Couchiching	4,043 50			20 00	4,063 50
Newcastle	478 60		5,000 00		5,478 00
New Liskeard, Lake Témiscamingue	1,532 38				1,532 38
Carried forward	157,457 00	87,473 79	81,464 49	7,174 37	333,569 65

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
HARBOURS AND RIVERS—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	157,457 00	87,473 79	81,464 49	7,174 37	333,569 65
Ontario—Con.					
North Bay			14 00		14 00
Oakville			4,013 65		4,013 65
Orillia		3,076 33			3,076 33
Oshawa		1,268 20			1,268 20
Otonabee River	1,322 36				1,322 36
Owen Sound	18,528 27	400 00			18,928 27
Pelee Island		3,600 54			3,600 54
Penetanguishene	10,076 65				10,076 65
Pickering	1,838 08		1,260 08		3,098 16
Point Edward	6,966 34				6,966 34
Port Arthur	29,146 02				29,146 02
Port Burwell	1,725 25	38,428 06			40,153 31
Port Colborne		262,666 46			262,666 46
Port Elgin	1,456 48		4,999 98		6,456 46
Port Hope	2,086 17		5,017 45		7,103 62
Port Rowan			264 19		264 19
Portsmouth			516 50		516 50
Port Stanley			10,267 79		10,267 79
Presque Ile Wharf			144 23		144 23
Richards Landing			1,498 46		1,498 46
River St. Lawrence (dredging at Wolf Island)	9,995 45				9,995 45
River Kaministiquia	59,704 91				59,704 91
Rondeau Harbour	3,007 62		6,937 13		9,944 75
River Thames	8,449 77				8,449 77
Sault St. Marie	11,643 23	3,764 75			15,407 98
Sheguindah			181 35		181 35
Scugog River	2,904 50				2,904 50
Southampton		17 75			17 75
South Nation River		1,002 80			1,002 80
St. Joseph, Lake Huron		5,042 39			5,042 39
Stugeon Falls		506 54			506 54
Sydenham River			96 00		96 00
Summertown			96 08		96 08
Thessalon			659 80		659 80
Thornbury	6,130 00		507 93		6,637 93
Toronto	2,582 00	6,557 08			9,139 08
Trenton	240 00				240 00
Victoria Harbour	1,761 10				1,761 10
Wendover		3,083 17			3,083 17
Wiarton	1,290 00		698 49		1,988 49
Generally	4,076 77			10,130 02	14,206 79
Totals, Ontario	342,387 97	416,887 86	118,637 60	17,304 39	895,217 82
Manitoba.					
Gull Harbour		2,488 44			2,488 44
Gypsumville	1,212 57				1,212 57
Gimli			3,555 58		3,555 58
Hnausa		2,532 73			2,532 73
Lake Dauphin, lowering		470 46			470 46
Lake Frances, Outlet		6,496 91			6,496 91
Lake Manitoba (buoys)		107 50			107 50
Red River—Mouth	11,971 03				11,971 03
Selkirk		4,391 13			4,391 13
St. Andrew's Rapids (Red River)		62,852 84			62,852 84
White Mud River	3,336 63				3,336 63
Generally	5,019 87		2,700 32		7,720 19
Totals, Manitoba	21,540 10	79,340 01	6,255 90		107,136 01

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
HARBOURS AND RIVERS.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
British Columbia.					
Anderson Lake			1,486 80		1,486 80
Columbia River, above Revelstoke			4,901 91		4,901 91
" " Golden		7,490 54			7,490 54
" below Golden		1,995 47			1,995 47
" Upper and Lower Arrow Lakes		11,306 30			11,306 30
Duncan River			1,993 56		1,993 56
Esquimalt, graving dock				15,179 20	15,179 20
Fraser River	30,397 49		4,913 29		35,310 78
Hardy Bay, wharf		2,458 00			2,458 00
Kennedy Lake			2,004 39		2,004 39
Nanaimo Harbour	12 00				12 00
Pender Island	3,590 75				3,590 75
Salmon River			2,578 76		2,578 76
Skeena River			7,410 79		7,410 79
Victoria Harbour	17,276 57				17,276 57
Williams Head, quarantine station			1,757 60		1,757 60
Generally				2,827 54	2,827 54
Totals, British Columbia	51,276 81	23,250 31	27,047 10	18,006 74	119,580 96
Yukon Territory.					
Lewes and Yukon Rivers		26,852 18			26,852 18
Totals, Yukon		26,852 18			26,852 18
Harbours and Rivers Generally.					
General expenses of staff, &c	4,901 51			9,914 51	14,816 02
Totals, Harbour and rivers generally	4,901 51			9,914 51	14,816 02
DREDGES AND DREDGING PLANT.					
Maritime Provinces		184,615 82	*a*		184,615 82
Ontario and Quebec		173,066 41	16,535 89		189,602 30
Manitoba		3,931 33	12,053 99		15,985 32
British Columbia			4,997 43		4,997 43
Totals, dredges and dredging plant		361,613 56	33,587 31		395,200 87
SLIDES AND BOOMS.					
Richelieu River, Q.—					
Belœil booms			25 25	140 12	165 37
St. John's booms			8 73		8 73
Ottawa District				29,801 60	29,801 60
Ottawa River			5,205 32		5,205 32
Black River			142 95		142 95
Coulonge River			1,892 59		1,892 59
Dumoine River			1,005 79		1,005 79
Gatineau River		4,949 29	2,291 11		7,240 40
Madawaska River			1,384 47		1,384 47
Petewawa River			1,808 77		1,808 77
St. Maurice District		30,313 14	10,181 60	38,108 17	78,602 91
Trent and Newcastle District		303 27	2,188 15	2,058 60	4,550 02
Generally, including collection of tolls				3,815 70	3,815 70
Totals, slides and booms		35,565 70	26,134 73	73,924 19	135,624 62

(*a*) Cost of repair apportioned with dredging, see various harbours in Maritime Provinces.

PART II.—STATEMENT A.—*Continued*

Name of Work.	Construction and Improvement.	Repairs.	Staff and Maintenance.	Total.
ROADS AND BRIDGES.	$ cts.	$ cts.	$ cts.	$ cts.
Quebec and Ontario.				
Des Joachims Bridge, Ottawa River	1,358 77			1,358 77
Hull Bridge, Pond Creek		1,130 52		1,130 52
Otttawa, Maria St., (Laurier) Bridge	5,078 57			5,078 57
Ottawa City bridges and streets maintained by Govt.—				
Chaudière bridges and approaches		1,178 78		1,178 78
Sappers and Dufferin bridges and Wellington st.		5,871 28		5,871 28
Lighting all the above			1,847 50	1,847 50
Portage du Fort Bridge, Ottawa River	356 69			356 69
York Bridge, Grand River			16 00	16 00
North-West Territories.				
Battleford Bridge, Battle River	21,848 97			21,848 97
Edmonton Bridge, Saskatchewan River		397 22		397 22
Calgary Bridge, Bow River		2 00		2 00
Lethbridge Bridge, Belly River		2,964 75		2,964 75
Macleod Bridge, Old Man's River		1,663 53		1,663 53
Generally N. W. T.			2,049 70	2,049 70
Yukon District.				
Yukon River Road	481 00			481 00
Totals, Roads and Bridges	29,124 00	13,208 08	3,913 20	46,245 28
TELEGRAPH LINES.				
Newfoundland.				
Cape Ray line (subsidy)			500 00	500 00
Nova Scotia.				
Chéticamp line			2,654 44	2,654 44
Mabou to Port Hawkesbury	3,308 73			3,308 73
Meat Cove line			4,784 22	4,784 22
St. Peters to Louisbourg, Scatari and North Sydney	6,639 65			6,639 65
" Canso	4,982 60			4,982 60
Prince Edward Island.				
P. E. Island and mainland (subsidy)			1,946 66	1,946 66
New Brunswick.				
Bay of Fundy			2,749 07	2,749 07
Escuminac			634 80	634 80
Quebec.				
Anticosti-Gaspé line			4,394 76	4,394 76
Belle-Isle and Chateau Bay, Marconi system	2,550 18			2,550 18
" line	138 83			138 83
Bryon Island to Anticosti and Magdalen Islands	71,477 24		296 00	71,773 24
Chicoutimi to St. Charles and St. Ambroise	1,185 41			1,185 41
Father Point			500 00	500 00
Grosse Isle quarantine line			4,750 15	4,750 15
Isle aux Coudres line		174 72		174 72
Magdalen Islands lines	3,397 39		4,628 82	8,026 21
Maritime Provinces and Gulf generally		3,254 54	4,622 10	7,876 64
North Shore, west of Bersimis			6,027 42	6,027 42
" east "	220 50	2,284 27	17,911 57	20,416 34
Carried forward	93,900 53	5,713 53	56,400 01	156,014 07

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
TELEGRAPH LINES—*Con.*	$ cts.	$ cts.	$ cts.	$ cts
Brought forward	93,900 53	5,713 53	56,400 01	156,014 07
Quebec—Con.				
Romaine to Belle-Isle	4,159 90			4,159 90
St. Anne du Saguenay to St. Charles	1,462 10			1,462 10
Theodore Bouchard, allowance			346 45	346 45
Cableship 'Tyrian'			36,699 69	36,699 69
Ontario.				
Pelee Island line		3,097 70	396 84	3,494 54
North-west Territories.				
St. Albert and Rivière qui Barre line	1,753 22			1,753 22
North-West lines generally			20,000 00	20,000 00
British Columbia and Yukon District.				
Alberni-Cape Beale			1,118 00	1,118 00
Alberni-Clayoquot	6,463 49		1,856 53	8,320 02
Ashcroft-Dawson	20,033 45		281,608 28	301,641 73
Golden-Windermere	1,230 73		2,589 32	3,820 05
150-Mile House-Quesnelle	5,105 94			5,105 94
Kamloops-Nicola Lake			684 05	684 05
Nanaimo-Comox			3,817 00	3,817 00
Port Simpson-Hazelton	1,044 97			1,044 97
Vancouver-Salt Spring Island			179 10	179 10
Victoria-Cape Beale		2,381 96	4,607 21	6,989 17
British Columbia, generally			79 38	79 38
Telegraph service, generally			2,363 20	2,363 20
Totals, Telegraph Lines	135,154 33	11,193 19	412,745 06	559,092 58

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
MISCELLANEOUS.					
Surveys and inspections				48,496 72	48,496 72
Temporary employes—					
Secretary and accountant's staff				38,543 71	38,543 71
Chief architect's staff				29,982 55	29,982 55
Chief engineer's staff				69,063 24	69,063 24
Supt. tel. service staff				4,000 00	4,000 00
Departmental photographer				750 00	750 00
Technical and other books of reference				559 89	559 89
Vaillancourt, F.—gratuity				32 50	32 50
Public Works agency, B.C.				1,193 57	1,193 57
Totals, miscellaneous				192,622 18	192,622 18

RECAPITULATION.

Totals, Public Buildings—					
Nova Scotia		83,351 19	11,910 92	30,577 02	125,839 13
Prince Edward Island			1,235 33	6,330 94	7,566 27
New Brunswick		30,900 68	7,620 51	24,100 13	62,621 32
Maritime Provinces generally				980 08	980 08
Quebec		102,626 72	42,646 53	83,286 61	228,559 86
Ontario		292,573 87	237,826 61	278,850 62	809,251 10
Manitoba		12,211 51	10,182 52	20,055 01	42,449 04
North-west Territories		39,823 32	9,059 51	18,365 86	67,248 69
British Columbia		71,822 99	26,725 49	24,410 04	122,958 52
Yukon Territory		8,999 04		44,453 27	53,452 31
Public Buildings generally				18,079 28	18,079 28
Totals, Harbours and Rivers—					
Nova Scotia	31,753 31	128,980 34	42,471 96	13,480 22	216,685 83
Prince Edward Island	14,541 49	34,359 28	13,213 95	1,075 85	63,190 57
New Brunswick	36,195 40	116,809 02	33,618 91	3,480 21	190,103 54
Quebec	84,593 69	1,157,984 04	71,075 27	15,491 05	1,329,144 05
Ontario	342,387 97	416,887 86	118,637 60	17,304 39	895,217 82
Manitoba	21,540 10	79,340 01	6,255 90		107,136 01
British Columbia	51,276 81	23,250 31	27,047 10	18,006 74	119,580 96
Yukon District		26,852 18			26,852 18
Harbours and Rivers generally	4,901 51			9,914 51	14,816 02
Totals, dredges and dredging plant		361,613 56	33,587 31		395,200 87
" slides and booms		35,565 70	26,134 73	73,924 19	135,624 62
" roads and bridges		29,124 00	13,208 08	3,913 20	46,245 28
" telegraph lines		135,154 33	11,193 19	412,745 06	559,092 58
" Miscellanoues				192,622 18	192,622 18
Grand totals of expenditure	587,190 28	3,188,229 95	743,651 42	1,311,446 46	5,830,518 11

PART II.—STATEMENT B—Showing the cost of the following services for each Public Building, &c.; (the total for each province being carried into Statement "A.")

Name of Building.	Rents.	Salaries of Engineer, &c.	Heating.	Lighting.	Water.	Total.
Nova Scotia.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Amherst post Office		466 70	187 50	291 60	30 00	975 80
Annapolis "		488 65	175 46	183 75	40 00	887 86
Antigonish "		469 00	98 84	50 60	10 00	628 44
Arichat " &c.			245 00			245 00
Baddeck "		306 67	129 75	21 50		457 92
Dartmouth " &c		291 70	87 56	169 77	20 70	569 73
Digby " &c		479 22	213 75	398 56	60 00	1,151 53
Halifax, Asst. Receiver General's office	1,517 40		50 40	66 20		1,634 00
" Dominion Building		3,007 90	1,099 05	2,284 80	500 00	6,891 75
" Drill Shed		1,090 57				1,090 57
" Examining Warehouse	1,250 00	466 70	9 10	53 40		1,779 20
" Immigrant Shed		700 00	11 60	411 94	1,108 41	2,231 95
" Engineer's Office	449 50					449 50
Kentville Post Office &c		470 80	335 54	260 00	50 00	1,116 34
Liverpool "		472 28	211 95	141 01	18 00	843 24
Lunenburg		364 69	252 69	111 80	44 25	773 43
New Glasgow Post Office &c		365 48	184 50	448 88	100 00	1,098 86
North Sydney "		475 13	165 90	188 53	22 00	841 56
Pictou, Custom House		6 50	52 20	5 50	54 17	118 37
" Post Office		541 98	217 81	218 75	77 83	1,056 37
Springhill Post Office &c		495 48	300 90	233 53	60 00	1,089 91
Sydney "		478 29	124 00	743 53	70 00	1,415 82
Truro "		417 37	204 61	310 48	60 00	992 46
Windsor "		477 83	340 43	251 00	25 00	1,094 26
Yarmouth "		477 93	14 00	322 60	72 00	886 53
Totals, Nova Scotia, carried to Statement A, page 3	3,216 90	12,810 87	4,712 54	7,157 73	2,422 36	30,320 40
Prince Edward Island.						
Charlottetown Dominion Building		2,451 61	555 69	1,078 92	168 75	4,254 97
" Engineer's Office	290 00					290 00
Montague Post Office		198 57	67 80	18 75		285 12
Summerside "		510 99	331 98	157 88		1,000 85
Totals, Prince Edward, Island, carried to Statement A, page 3	290 00	3,161 17	955 47	1,255 55	168 75	5,830 94
New Brunswick.						
Bathurst P. B		573 59	259 42	24 00		857 01
Carleton, St. John, Post Office, &c		116 70	193 89	162 95	8 50	482 04
Chatham Post Office, &c		379 76	362 83	124 20	14 25	881 04
Dalhousie "		469 40	146 48	9 60		625 48
Fredericton P. B		483 19	120 26	578 97	51 00	1,233 42
Moncton P. B		485 70	283 85	342 40	134 00	1,245 95
Newcastle P. B		492 74	242 98	193 20		928 92
Portland P. B			55 34		13 50	68 84
St. John Custom House		2,247 90	2,166 75	528 09	572 28	5,515 02
" Post Office	175 95	1,606 00	1,021 91	2,612 80	757 67	6,174 33
" Savings Bank	44 00	4 45	396 66	129 63	18 70	593 44
Tracadie Lazaretto		187 50	755 00			942 50
St. John Immgt. Bldg		618 01	539 69	597 47	59 60	1,814 77
St. Stephen's Post Office, &c		479 49	120 28	412 50	64 00	1,076 27
Sussex Post Office, &c		239 37	126 65	143 61		509 63
" Armoury			65 50			65 50
Woodstock Post Office, &c		499 20	218 35	161 25	34 00	912 80
Totals, New Brunswick, carried to Statement A, page 4	219 95	8,883 00	7,075 84	6,020 67	1,727 50	23,926 96
Quebec.						
Aylmer post office		70 00	242 00	155 50	33 00	500 50
Berthierville post office		10 79	193 45	30 36	34 34	268 94
Buckingham public building		179 90	101 00	127 48	65 10	473 48
Carried forward		260 69	536 45	313 34	132 4	1,242 92

SESSIONAL PAPER No. 19

PART II.—STATEMENT B.—Showing the cost of the following services for each Public Building, &c.—*Continued.*

Name of Building.	Rents.	Salaries of Engineers, &c.	Heating.	Lighting.	Water.	Total.
Quebec—Concluded.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward		260 69	536 45	313 34	132 44	1,242 92
Chicoutimi engineers office	25 00					25 00
Coaticook public building		494 60	204 51	326 70	40 00	1,065 21
Drummondville public building		116 51	142 62	33 62	8 76	301 51
Granby public building		32 25	63 50	7 89		103 64
Grosse Isle quarantine station				251 40		251 40
Fraserville public building		362 05	127 50	38 01	60 00	587 56
Hochelaga post office		277 34	260 93	93 09	60 62	691 98
Hull post office		177 00	279 70	667 73	156 52	1,280 95
Joliette post office		478 42	216 23	98 55	108 00	901 20
Lachine post office		134 60	54 00	70 20	29 52	288 32
Laprairie post office		69 40	167 02	36 44	40 00	312 86
Montmagny post office		14 58	42 35	35 93	27 00	119 86
Montreal Civil Service exam. office	158 50					158 50
" custom house		2,415 52	1,363 61	517 37	323 13	4,619 63
" dominion public building		1,741 67				1,741 67
" drill hall		765 00				765 00
" examining warehouse		2,503 94	3,332 32	926 28	531 61	7,294 15
" immigration building	500 00					500 00
" inland rev nue office		701 07	431 73	206 64	103 91	1,443 35
" post office	454 67	14,779 56	1,312 68	7,893 23	913 86	25,354 00
" engineers office	262 50				30 07	292 57
" P. O. Windsor st	650 00					650 00
Quebec citadel buildings	32 50	568 57	528 05	11 13		1,140 25
" clerk of works office, P. O.	40 00	87 00				127 00
" " " residence	25 00					25 00
" culler's office		631 50	223 18			854 68
" custom house		694 87	1,269 21	876 89	815 90	3,656 87
" examining warehouse		1,844 67	769 25	206 51	458 48	3,278 91
" immigration office		150 65	749 88	704 40		1,604 93
" observatory					50 00	50 00
" post office building		1,883 22	1,121 99	976 75	764 31	4,746 27
" Queen's wharf building			497 33	51 80	764 31	1,313 44
" St. Rock P.O			40 89	41 67		82 56
" engineer's office	198 00					198 00
Peribonka immigrant shed		350 00	93 75			443 75
Richmond public building		339 98	371 90	195 90	25 00	932 78
Rimouski " "		187 50	130 50	39 20		357 20
Roberval immigration shed		350 00	125 25	36 22	33 75	545 22
" engineer's office	16 67					16 67
Sherbrooke P. B		519 60	480 61	792 57	43 75	1,836 53
Sorel P. B		566 51	120 60	364 50	250 00	1,301 61
St. Henri P. O			21 00	78 04	36 60	155 64
St. Hyacinthe P. B		496 72	414 90	401 65	71 00	1,388 27
St. Jérôme P. B		482 90	209 95	191 37	25 00	909 22
St. John's P. B		408 40	81 03	250 00		739 43
Three Rivers custom house		361 56	212 92	57 71	48 00	680 19
" post office		504 15	461 94	88 62	62 00	1,116 71
Valleyfield P. B	150 00	1 50	77 00	68 90	37 09	334 49
Victoriaville "	2 00	93 00	264 13	116 08	50 02	525 23
West Farnham post office		5 75	84 80	69 98	10 00	170 53
Total for Quebec, carried to Statement A, page 5	2,514 84	35,851 65	16,885 21	17,156 31	6,114 65	78,522 66
Ontario.						
Almonte post office, &c		477 25	137 12	111 33	77 00	802 70
Amherstburg post office, &c		502 88	57 65	210 45	26 25	797 23
Arnprior P. B		479 30	60 00	165 49	57 80	762 59
Barrie "		474 70	5 00	159 96	50 00	689 66
Belleville "		791 93	538 03	700 35	85 50	2,115 81
Berlin "		508 50	267 76	432 03	15 83	1,224 12
Carried forward		3,234 56	1,065 56	1,779 61	312 38	6,392 11

PART II.—STATEMENT B.—Showing the cost of the following services for each Public Building, &c.—*Continued.*

Name of Building.	Rents.	Salaries of Engineers, &c.	Heating.	Lighting.	Water.	Total.
Ontario—Con.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward		3,234 56	1,065 56	1,779 61	312 38	6,392 11
Brampton P.B.		492 50	92 55	320 89	31 50	937 44
Brantford "		716 14	414 63	414 96	38 00	1,583 73
Brockville "		481 20	349 10	735 25	170 00	1,735 55
Carleton Place P. B.		362 18		38 10		400 28
Cayuga P. O.		62 10	92 10	7 35		161 55
Chatham, P. B.		555 97	175 83	336 28	42 50	1,110 58
Cobourg post office, &c.		477 55	222 25	394 51	53 07	1,147 38
Cornwall P. B		549 94	382 00	692 83	56 25	1,681 02
Deseronto "		2 20		0 25		2 45
Dundas post office	625 00	58 40		65 00		748 40
Galt P. B.		502 36	232 20	310 86	32 50	1,077 92
Gananoque custom house			192 90	94 00		286 90
" post office		2 00	144 65	141 00	5 00	292 65
Goderich public building		467 70	41 69	70 80	60 00	640 19
Guelph "	12 50	489 50	195 28	332 64	37 44	1,067 36
Hamilton custom house		700 00	32 00	76 27	35 70	843 97
" drill shed		495 00				495 00
" post office		1,552 07		2,080 71	1,010 95	4,643 73
Ingersoll public building		530 06	49 02	340 13	32 55	951 76
Kingston custom house		230 20	317 40	141 30	73 60	762 50
" exam. warehouse			41 40		0 55	41 95
" inland revenue office				306 98	81 37	388 35
" military college		2,945 00		314 00		3,259 00
" post office		175 25	314 50	1,096 01	48 06	1,633 82
Lindsay post office		466 70	166 35	93 75	30 00	756 80
London custom house		1,272 57	765 52	756 66	140 00	2,934 75
" post office		728 88	787 10	847 67	60 00	2,423 65
Napanee "		524 80	250 00	60 10	69 44	904 34
Niagara Falls public building		497 15	216 23	327 00	45 00	1,085 38
Orangeville post office		474 43	200 63	80 65	15 00	770 71
Orillia "		358 25	194 40	90 27	32 50	675 42
Ottawa, experimental farm			1,610 82	55 47		1,666 29
" geological museum		648 00	1,433 68	273 90		2,355 58
" Major's Hill green-house		288 00	322 50			610 50
" military stores			374 50			374 50
" national art gallery		130 00	234 00	40 00		404 00
" parliamentary and departmental buildings		32,561 94	34,951 38	18,850 82		86,363 14
" post office		1,273 50	784 00	1,112 10		3,169 60
" printing bureau		6,447 79	8,244 52	564 90		15,257 21
" supreme court		1,572 00	669 53	334 00		2,575 53
" rideau hall guard-room			46 00			46 00
Ottawa, rented buildings—						
Census building	8,125 00	2,306 00	586 95	225 00		11,242 95
Customs statistical office	1,875 00	288 00	361 20	206 00		2,730 20
" exam. warehouse	1,700 00	576 00	260 00			2,536 00
Dairy commissioner's office	1,433 33		260 00			1,693 33
French translators' office	525 00		72 75	90 50		688 25
Geological, museum annex	750 00					750 00
Immigration com'r's office	2,250 00			173 76		2,423 76
Interior dept. (Slater chambers)	525 00					525 00
Labour dept.	1,200 00			96 50		1,296 50
Langevin block, Howell and Perley claims	15 00					15 00
Marine stores	240 00		193 50			433 50
Model-room	562 50					562 50
N. W. M. Police stores	1,425 00		167 70	83 00		1,675 70
Observatory				72 00		72 00
Post office dept. (Slater chambers)	675 00					675 00
Public works (Slater chambers)	630 00					630 00
" workshops and yard	2,200 00	912 00	451 50	691 50		4,255 00
Surveyor General's offices	4,500 00	288 00	313 54	240 00		5,341 54
Carried forward	29,268 33	66,695 89	58,273 36	35,455 28	2,513 36	192,206 22

SESSIONAL PAPER No. 19

PART II.—STATEMENT B.—Showing the cost of the following services for each Public Building, &c.—*Continued*.

Name of Building.	Rents.	Salaries of Engineers, &c.	Heating.	Lighting.	Water.	Total.
Ontario—Con.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	29,268 33	66,695 89	58,273 36	35,455 28	2,513 36	192,206 22
Paris P. B		404 13	10 00	176 46	63 60	654 19
Pembroke post office		479 20	213 96	148 50	28 00	869 65
Peterboro' custom house		356 80	281 73	188 18	50 00	876 71
" post office		358 00	229 13	537 50	75 00	1,199 63
Petrolea "		485 60	46 68	25 51	22 32	580 11
Picton "		426 90	214 50	159 25	25 59	826 24
Port Arthur "		362 25	203 00	96 15		661 40
Port Colborne "		309 55		156 25	10 00	475 80
Port Hope "		480 50	242 05	386 20	8 79	1,117 54
Prescott post office		484 74	48 00	125 00	120 00	777 74
Rat Portage P. B		483 05	715 38	218 95	70 76	1,488 14
Sarnia P. B			7 00			7 00
Smith's Falls post office		358 40	167 50	166 31	91 90	784 11
Stratford P. B		762 50	374 87	317 83	84 08	1,539 28
Strathroy P. B		495 95		236 89	2 70	735 54
St. Catharines P. B		477 40	93 35	324 05	57 00	951 80
St. Thomas P. B		495 00	233 50	914 05	53 77	1,746 32
" armoury		70 00				70 00
Toronto civil service exam. office	46 00					46 00
" custom house		1,631 34	408 30	294 21	56 28	2,390 13
" Dominion P. B		1,400 00				1,400 00
" drill shed		1,305 82				1,305 82
" examining warehouse		5,323 17	1,059 89	205 89	69 83	6,658 28
" P. O. for P. M	120 00					120 00
" inland revenue office		781 75	164 43	198 20	21 40	1,165 78
" steamboat inspector's office	562 50					562 50
" post office		2,081 97	1,383 93	3,428 30	324 67	7,218 87
" " stable	180 00					180 00
" union station	875 00	700 75		1,600 08	4 00	3,179 83
" receiver general		522 50		128 58		651 08
" engineer's office	668 00			12 00		680 00
Trenton post office		571 40	142 06	257 50	75 00	1,045 96
Walkerton "		469 88	190 89	259 40	31 00	951 17
Windsor P. B		926 20	448 75	906 98	96 00	2,377 93
" armoury		350 00				350 00
Woodstock P. B		516 10	320 42	342 08	44 00	1,222 60
Total for Ontario, carried to Statement A, page 7	31,719 83	90,566 74	65,522 67	47,265 08	3,999 05	239,073 37
Manitoba.						
Brandon Dominion lands office		700 00			75 00	775 00
" experimental farm			257 61			257 61
" immigrant building			80 20			80 20
" post office &c		34 80	769 40	718 74		1,522 94
East Selkirk, immigrant shed	10 00		488 50			498 50
Minnedosa Dominion lands office			149 45			149 45
Portage LaPrairie, post office		466 70	547 58	262 20		1,276 48
Winnipeg, Crown timber		108 50				108 50
" custom house		416 60	827 28	171 36	71 76	1,487 00
" Dominion lands office			267 25	17 15	31 43	315 83
" engineer's office	379 75					379 75
" examining warehouse			395 22	52 82	21 27	469 31
" immigrant shed			1,342 17	596 50	594 92	2,533 59
" post office	50 60	3,141 32	2,491 15	3,269 58	660 58	9,612 63
" weight and measure	120 00					120 00
Total for Manitoba, carried to Statement A, page 7	559 75	4,867 92	7,615 81	5,088 35	1,454 96	19,586 79

PART II.—STATEMENT B.—Showing the cost of the following services for each Public Building, &c.—*Continued.*

Name of Building.	Rents.	Salaraies of Engineers, &c.	Heating	Lighting.	Water.	Total.
North-west Territories.	$ cts.	$ cts.	$ cts	$ cts.	$ cts.	$ cts.
Alameda, Dominion lands	195 00		56 87			251 87
Calgary, court house, &c		726 93	422 93	159 25	330 00	1,639 11
" engineer's office	40 00					40 00
" immigrant building			155 79			155 79
" land and registry office		9 25	43 64	6 80		59 69
" post office		607 50	257 16	535 90	340 00	1,740 56
Carnduff court house			7 05			7 05
Dauphin, immigrant shed			41 00			41 00
Edmonton, court-house	150 00		7 20	1 98		159 18
" Dom. lands & registry office		472 00	250 50	4 60		727 10
" immigrant shed	700 00		207 71			907 71
" post office	45 00	6 10	5 00	122 90		179 00
Indian Head, experimental farm			12 00			12 00
Lacombe, immigrant building	253 00		52 50			305 50
Leduc " "	60 00					60 00
Lethbridge court house & custom house		7 90				7 90
" immigration building			39 00			39 00
" post office	36 00	534 00	157 50	140 18	42 00	909 68
Medecine Hat, court house		652 30	93 61	58 63	15 00	819 54
Macleod, custom house		204 20	119 94			324 14
" court-house	375 00		56 96			431 96
" immigrant hall	140 00		42 40			182 40
Moose Jaw, court-house		466 70	133 75		1 00	601 45
Moosomin "		706 65	386 84	13 61		1,107 10
Ponoka, immigrant building	96 00					96 00
Prince Albert, Dom. lands & reg. office	30 50	480 60		10 50		521 60
" immigrant shed			215 60			215 60
Qu'Appelle, court house		45 00				45 00
Red Deer, Dominion lands office	120 00		77 00			197 00
" immigrant shed	300 00					300 00
Regina, court house		1,247 76	563 75	213 53		2,025 04
" Dominion lands & regis. office		648 75	485 25	367 80		1,501 80
" immigrant building			214 25	1 60		215 85
" post office		5 90	282 25	10 85		299 00
Northern, immigrant shed			45 25			45 25
" Dominion lands	65 00					65 00
Saskatoon immigrant shed			151 87			151 87
Strathcona immigrant shed	180 00		97 15			277 15
Wetaskinwin immigrant shed	200 00		22 50			222 50
" court house	15 00					15 00
Wolsley court house		18 95	187 72			206 67
" lands office		630 00				630 00
Yorkton Dominion lands office	390 00					390 00
" immigrant building			16 00			16 00
Total, North-west Territories, carried to Statement A, page 8	3,390 50	7,470 49	4,907 94	1,648 13	728 00	18,145 06
British Columbia.						
Agassiz experimental farm			73 40			73 40
Atlin post office		177 25	90 00	46 60		313 85
Esquimalt custom house			13 10			13 10
Kamloops P. B		753 00		220 77	36 00	1,009 77
" Dominion lands office			259 25			259 25
Kaslo drill hall			4 00			4 00
Nanaimo post office		713 85	70 00	287 60	36 00	1,107 45
Nelson public building		150 00	70 25			220 25
New Westminster drill shed			205 41			205 41
" engineer's office	203 00			1 00		204 00
" post office		772 55	582 34	510 62	57 27	1,922 78
Carried forward	203 00	2,566 65	1,367 75	1,066 59	129 27	5,333 26

PART II.—STATEMENT B.—Showing the cost of the following services for each Public Building, &c.—*Concluded.*

Name of Building.	Rents.	Salaries of Engineers, &c.	Heating.	Lighting.	Water.	Total.
British Columbia—Con.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	203 00	2,566 65	1,367 75	1,066 59	129 27	5,333 26
Rossland public building			83 59		48 00	131 59
Vancouver drill hall		3 00	290 64			293 64
" examining warehouse	1,560 00					1,560 00
" post office	837 50	1,456 53	544 64	1,594 12	52 90	4,485 69
Victoria, old custom house		710 75	167 60	57 76	17 00	953 11
" barracks			133 63			133 63
" drill hall			107 19			107 19
" indian office				12 30		12 30
" military store			165 78			165 78
" post office	42 00	3,273 15	1,028 65	1,728 44	59 60	6,131 84
" old post office					80 10	80 10
William's Head quarantine station	30 00		3,215 94			3,245 94
Total, British Columbia, carried to Statement A, page 8	2,672 50	8,010 08	7,105 41	4,459 21	386 87	22,634 07
Dominion buildings generally		15 20	1,094 73			1,109 93

STATEMENT C.—Showing amounts loaned by Government under the authority of special Acts of Parliament and upon the recommendation of the Hon. the Minister of Public Works, during the Fiscal Year 1902-3.

To Whom Loaned.	Parliamentary Authority.	Purpose.	Amount.
Harbour Commissioners of Montreal.	Acts 59 Vict., ch. 10 and 61 Vict., ch. 47.	General works of improvement to harbour.	$600,000 00
Harbour Commissioners of Montreal.	Act 1, Ed. VII., ch. 9.	Construction of a steel grain elevator.	300,000 00
	Total	.....	$900,000 00

A. G. KINGSTON,
Accountant.

DEPARTMENT OF PUBLIC WORKS,
ACCOUNTANT'S OFFICE,
OTTAWA, Jan. 23, 1904.

PART III.

REPORT

ON

PUBLIC BUILDINGS THROUGHOUT THE DOMINION

FOR THE FISCAL YEAR ENDED JUNE 30, 1903

BY THE

CHIEF ARCHITECT

PUBLIC WORKS, CANADA,
CHIEF ARCHITECT'S OFFICE,
OTTAWA, November 23, 1903.

FRED. GÉLINAS, Esq.,
Secretary,
Department of Public Works.

SIR,—I beg to submit, herewith, my official report on Dominion public buildings for the fiscal year ended June 30, 1903.

I have the honour to be, sir,
Your obedient servant,
D. EWART,
Chief Architect.

PROVINCE OF PRINCE EDWARD ISLAND.

CHARLOTTETOWN.

PUBLIC BUILDING.

Further levelling and planting of grounds were carried out and repairs effected to furnaces, P. O. boxes, plastering, glazing, painting, woodwork, &c.

QUARANTINE STATION.

The exterior woodwork of the building was largely renovated, the roof shingled, the building painted throughout and general repairs effected.

SUMMERSIDE.

PUBLIC BUILDING.

Additions were made to the electric lighting, and minor repairs to building and heating apparatus were effected.

PROVINCE OF NOVA SCOTIA.

ANNAPOLIS.

PUBLIC BUILDING.

An asphalt sidewalk with granite curb was laid along the street line of the government property, under the supervision of C. E. W. Dodwell, resident engineer and inspector of public buildings, Nova Scotia, Halifax.

ARICHAT.

PUBLIC BUILDING.

On May 13, 1902, a contract was entered into for the construction of this building on the government property in the town of Arichat, between the Highway and the har-

bour, westward of the old post office. It is a wooden 2½-story building on a cement concrete basement, 40 feet by 30 feet, to contain in the basement a bonded warehouse 19 feet square and two rooms for furnace and fuel; on the ground floor the post office and the telegraph office; on the first floor the customs' long room, collector's room and clerks' office, and in the attic 4 rooms for the caretaker.

Plans, &c., prepared and work supervised by this department.

Clerk of works—Wm. Maloney.

Contractor for construction of building—Edward Doyle.

Contractor for heating system—Frank Powers.

BADDECK.

PUBLIC BUILDING.

Repairs were made to plumbing, drainage and chimney, and the stonework outside was pointed. Work supervised by C. E. W. Dodwell, resident engineer and inspector of public buildings, Nova Scotia, Halifax.

DIGBY.

PUBLIC BUILDING.

Some furniture for the Customs was supplied under the supervision of C. E. W. Dodwell, resident engineer and superintendent of buildings, Nova Scotia, Halifax.

GUYSBOROUGH.

PUBLIC BUILDING.

On April 14, 1902, a contract was entered into for the construction of this building on the corner of Upper Water and Prince streets. It consists of a main 2½-story block of brick on a stone basement 26 feet by 32 feet, including a 4-story engaged tower 11 feet square on the N.E. corner, together with a 1-story brick adjunct on a stone foundation 33 feet by 22 feet. The entire basement, excepting underneath the tower, is excavated and is for furnace-room, fuel and stores ; the ground floor of the main building is for the post office, stairway-hall and wash-room, and the adjunct will contain the examining warehouse, customs and inland revenue offices; on the first floor are 6 offices, and in the attic the caretaker's apartments. In the yard is a well, also a detached wooden building on a stone foundation 15 feet by 10 feet, for a W.C.

Plans, &c., prepared and work supervised by this department.

Clerk of works—James Hall.

Contractor—E. T. Munro.

HALIFAX.

CUSTOM HOUSE.

This building, which was described in my last report, has been carried on continuously, and is now in progress.

DOMINION BUILDING.

Extensive repairs were effected to woodwork, floors, ceilings, plumbing, heating, &c.; the lobbies and halls were painted and some carpets and furniture supplied.

The building was decorated on the occasion of the coronation of His Majesty the King.

Work supervised by C. E. W. Dodwell, resident engineer and inspector of public buildings, Nova Scotia, Halifax.

DRILL HALL.

The main doors were re-varnished and the electric wiring repaired under the supervision of C. E. W. Dodwell, resident engineer and inspector of public buildings, Nova Scotia, Halifax.

EXAMINING WAREHOUSE.

Repairs were made to woodwork, ceilings, chimney, plumbing, heating and goods-hoist, under the supervision of C. E. W. Dodwell, resident engineer and inspector of public buildings, Nova Scotia, Halifax.

IMMIGRATION BUILDING.

Extensive repairs were made to plumbing, heating and plastering; the interior was painted throughout; a partition fence was put up in the main hall, and some hose and furniture supplied.

Work supervised by C. E. W. Dodwell, resident engineer and inspector of public buildings, Nova Scotia, Halifax.

LAWLOR'S ISLAND, QUARANTINE STATION,

Extensive repairs, renewals and additions were made to plumbing of first class detention building, the bacteriological laboratory was painted, and the woodwork of the buildings repaired generally.

Work supervised by C. E. W. Dodwell, resident engineer and inspector of public buildings, Nova Scotia, Halifax.

KENTVILLE.

PUBLIC BUILDING.

The brickwork of the street gable was treated with stone liquid to arrest scaling.

Work done under the supervision of C. E. W. Dodwell, resident engineer and inspector of public buildings, Nova Scotia, Halifax.

MIDDLETON.

ARMOURY.

This building, which was described in my last report, is completed and fitted up with a hot water heating system.

Plans, &c., prepared by this department.

Clerk of works—L. P. Young.

Contractors for construction and fittings—Allen, Son and Neily.

Contractors for heating—Crowe Brothers.

SIDNEY (C.B.), QUARANTINE—POINT EDWARD.

A shelter building was erected for the steam disinfecting apparatus, under the supervision of C. E. W. Dodwell, resident engineer and inspector of public buildings, Nova Scotia, Halifax.

SPRINGHILL.

PUBLIC BUILDING.

Water service and plumbing were installed, and a cesspool to receive drainage was built in yard.

PROVINCE OF NEW BRUNSWICK.

CARLETON (ST. JOHN WEST).

POST OFFICE.

The rear extension of the building, having settled through decay of the supporting piles, was jacked up and underpinned with a concrete and steel foundation wall; sundry repairs were made to woodwork, plumbing, vault doors, painting, stoves, &c.

All the foregoing supervised by D. H. Waterbury, of this department, St. John, N.B.

FREDERICTON.

PUBLIC BUILDING.

The back porch, being dilapidated, was removed and replaced by one of brick on a stone foundation, and having a metal covered roof. The water closet in basement was removed and replaced by a new flushometer closet. A special 2-inch water service main for fire purposes was laid from the street main into and up through building to roof, with hydrant valves and hose on each flat. The interior woodwork was painted, and the walls and ceilings, and a portion of the basement whitened. Some new gas lights were put in, and repairs were made to stonework, doors, sashes, locks and ventilators.

Work supervised by D. H. Waterbury, of this department, St. John, N.B.

MARYSVILLE.

PUBLIC BUILDING.

This building, which was described in my last report, is completed and fitted up with a hot water heating system.

Post office fittings, furniture, &c., are being supplied.

Plans, &c., prepared by this department.

Clerk of works—H. M. Clarke.

Contractor—C. J. B. Simmons.

PARTRIDGE ISLAND (ST. JOHN).

QUARANTINE STATION.

A temporary connection from steam pump was laid to detention buildings to supply salt water for flushing purposes. Plans are prepared for a fresh water supply from the city of St. John water service mains. At the quarantine steward's house, a new room was added to the extension, a chimney built, some new floors laid, a front stoop with steps and a rear platform built, some new doors hung, the foundation repaired and pointed, the woodwork of house painted and some roofing, plastering, glazing and general repairs effected. Under building C, the cellar was enlarged and an additional

window put in. In buildings B and C some of the ships' berths were removed and replaced by 'Ives' iron beds. The grounds about the detention buildings were graded.

Works supervised by D. H. Waterbury, of this department, St. John, N.B.

PORTLAND (ST. JOHN NORTH).

POST OFFICE.

New plumbing, including an enamelled sink, fitted up in tenants' quarters, new cornices were run and repairs were made to the woodwork and painting.

All under the supervision of D. H. Waterbury, of this department, St. John, N.B.

RICHIBUCTO.

PUBLIC BUILDING.

On November 25, 1902, a contract was entered into for the construction of this building on a plot of ground on the east side of Water street, facing the harbour, and near the intersection of Court street. It consists of a 2½-story main building of brick, with stone dressings, 29 feet by 38 feet, on a stone foundation, and having a 1-story and basement adjunct 23 feet by 25 feet, of similar materials. The floors, partitions, stairs and roofs are wood, the roof covering of metal, excepting the deck roof covering, which is tar and gravel, and the floor of basement, which is concrete. The basement is to contain the heating apparatus and fuel; the ground floor, the post office in the main portion and the examining warehouse and closets in the adjunct; the first floor, the customs offices, and the attic the caretaker's apartments.

Plans, &c., prepared by this department.

Clerk of works—Cyrille Comeau.

Contractor—James Reid.

ST. JOHN.

CUSTOM HOUSE.

A hardwood floor was laid in tank-room and the brick walls sheathed with wood. The north wing copper roof covering was repaired, and the entire copper roof covering, with the flag masts, were painted three coats. The metal screen of cashier's office in long room was painted; an additional telephone closet was built in the long room, and a flag closet in the dome. Shelving was put in the office of the Department of Public Works; articles of furniture, carpets, &c., were supplied to the offices of the Inspector of Lights, the Collector of Inland Revenue, the Inspector of Hulls and the Gas Inspector. Repairs were made to the asphalt floor and stone door sill of furnace-room, to the electric bells, plumbing, door locks, furniture, &c. An oak chromograph case was supplied for the meteorological service.

All under the supervision of D. H. Waterbury, of this department, St. John, N.B.

IMMIGRATION BUILDING.

This building was completed, furnished and occupied.

POST OFFICE.

A zinc-lined newspaper chute, reaching from lobby mailing slide to lower basement, and a zinc-lined receiving case were put in. Hardwood floors were laid in letter carriers' flat and lower basement rooms and halls. The basement walls and ceilings were limewashed and the woodwork painted. Window blinds were supplied to a number of offices; some condemned fire hose was replaced with new; an electric clock was

supplied in general delivery room; the lobby was tinted and painted; new bulletin boards were provided; the sorting tables were covered with zinc; improvements were made to electric lighting; a closet and bag rack were supplied for the Inspector's flat, and repairs were made to plumbing, elevators, electric bells, speaking tubes, iron shutters, vault and door locks, fittings, furniture, glazing and woodwork.

All under the supervision of D. H. Waterbury, of this department, St. John, N.B.

SAVINGS BANK.

The flag mast, being decayed, was removed and a new one substituted; the brick setting of furnace was repaired and in part renovated; some new tubes were put in furnace, and some repairs were made to windows. All under the supervision of D. H. Waterbury, of this department, St. John, N.B.

WOODSTOCK.

PUBLIC BUILDING.

The original wooden retaining wall was removed and a new retaining wall of rubble stone, faced and coped with granite, substituted.

Plans, &c., prepared by this department and work supervised by D. H. Waterbury, of this department, St. John, N.B.

Clerk of works—James McAnna.

Contractor—J. S. Leighton.

PROVINCE OF QUEBEC.

GRANBY.

PUBLIC BUILDING.

This building, which was described in my last report, is now completed, fitted up with a hot water heating apparatus, and is being fitted up with post office fittings, furniture, &c.

Plans, &c., prepared by this department.

Clerk of works—Wm. Cox.

Contractors for building—Dussault & Pageau.

Contractors for heating—Alex. Mackay & Co.

GROSSE ISLE.

QUARANTINE STATION.

The third class detention sheds Nos. 8, 9, 10 and 11 were converted into second class detention sheds, with division into passages, dormitories, kitchen, bath-rooms, &c., with water supply, drainage, &c. New windows, doors, steps, &c., were provided, and the interior of the buildings painted.

The third class detention sheds Nos. 13 and 14 were repaired and connected with the water service and drainage. The plastering in the Protestant Rectory was repaired. Fly screens were provided for the engineer's residence and the police quarters. An ice house was built to serve the superintendent and the assistant medical officer. The steamer 'Challenger' was caulked and painted and the pumps and boilers repaired.

All under the supervision of Ph. Béland, Clerk of Works.

L'ASSOMPTION.

PUBLIC BUILDING.

On December 1, 1902, a contract was entered into for the construction of this building on a plot of ground situated on the south side of St. Jacques street and west side of Notre Dame street. It is a 2½-story building of brick, with stone dressing, and on a stone basement measuring 38 feet by 30 feet. The floors, partitions, stairway and roofs are wood, and the roof covering metal, excepting the roof of deck, which is covered with tar and gravel, and the floor of basement, which is concrete. The basement is for the heating apparatus, fuel and storage; the ground floor has the post office, entrance hall and lavatory, and the upper floors the apartments of the caretaker.

Plans, &c., prepared and work supervised by this department.

Clerk of works—Louis Brouillette.

Contractor—Edmond Piché.

LEVIS.

CATTLE QUARANTINE.

The medical superintendent's office has had the interior renovated, the exterior painted, and a gallery built outside. A detention shed for the attendants and a shed for vehicles were built. Sheds 16 and 17 had the roof covering treated with coal tar. Several sheds were repaired, a quantity of inclosure fence was built, a large quantity replaced, and a portion renovated. A new sheep barn was constructed.

All under the supervision of Ph. Béland, clerk of works.

MONTREAL.

CUSTOM HOUSE.

Additions were made to the parcel carriers' system, the gas lighting and the water service. A private entrance for the detectives was opened from the lobby. A glass partition, a cupboard and a table were supplied to the warehouse department.

Repairs were made to the roof, the exterior painting and the heating furnaces. The interior of the building was cleaned and painted throughout.

All under the supervision of C. Desjardins, clerk of works.

EXAMINING WAREHOUSE.

The walls of the three entrances on the south side were demolished and rebuilt in line with the exterior wall; the space floored with steel beams carrying brick arches covered with hard wood. All the floor area of first, second and third stories was covered with hardwood. A story was added to the annex, having hardwood floor covering and concrete roof covered with gravel. An elevator well and an iron stairs were built on the south-west side. A new entrance was opened on the south-east side, giving access to first and second floors. All the old partitions were removed and replaced by iron screens, dividing the departments, and glazed partitions in the offices. A hardwood counter was placed the full length of the passage to serve each department. New water closets were fitted up on the first and second floors. Additions were made to the steam heating surface, and the system changed to vacuum low pressure. All the walls and brick partitions on first and second floors were repaired and whitewashed, the woodwork painted as also the external woodwork of openings and the main cornice. The hardwood of partitions, counters, &c., was oiled and varnished.

All under the supervision of C. Desjardins, clerk of works.

INLAND REVENUE BUILDING.

Two rooms were repaired, painted and furnished, as also a room for the collector. Additional gas jets and a wash basin were put in and repairs effected to roof and gas and water services.

Work done under the supervision of C. Desjardins, clerk of works.

POST OFFICE.

The customs postal package office was enlarged, wickets were opened in the wall facing the lobby and counters, cupboards and furniture supplied. The electric lighting system was renewed and added to. A portion of the water service piping was renovated and new hose supplied. New telephones and a lightning arresting apparatus for the protection of the motors were put in, and some minor repairs effected.

Work executed under the supervision of C. Desjardins, clerk of works.

QUEBEC.

ARTILLERY WORKSHOP.

The necessary benches and other fittings, as well as the shafting for power, were fitted up, and this building, of which there is a description in my last report, is now completed.

Plans, &c., prepared by this department.
Contractor for construction—Wm. Stuart.
Clerk of works—Ph. Béland.
Contractor for steam heating (vacuum system)—O. Picard & Son.
Contractor for electric lighting—Slade Electric Company.
Contractor for shafting—Carrière Lainé & Co.

CITADEL—GOVERNOR-GENERAL'S QUARTERS.

Repairs were made to electric lighting and bells, plumbing and to terrace inclosure; the mast was repainted and provided with new ball and halyards, and the interior of the building cleaned and put in order for the annual visit of Their Excellencies.

Work done under the supervision of Ph. Béland, clerk of works.

CUSTOM HOUSE.

The caretaker's quarters were replastered, and new vault doors with combination locks were provided. A hardwood floor has been laid in both kitchens, the telephone has been inclosed, some articles of furniture were supplied, the electric bells and the clocks were repaired and kept in order and minor repairs made to plumbing, &c.

All under the supervision of Ph. Béland, clerk of works.

EXAMINING WAREHOUSE.

The roof and the boilers were repaired, the plumbing of the first floor was renovated and some articles of furniture were supplied.

All under the supervision of Ph. Béland, clerk of works.

IMMIGRATION BUILDING, LOUISE BASIN.

Some partitions and bunks were put in, also some guard rails of iron pipe; a private staircase was built for the use of the assistant matron. The boiler, plumbing, drainage, pump, electric light and electric bells were repaired, and some utensils for

the kitchen provided. Some painting and glazing were done, and a number of blinds, carpets, linoleums, oil cloths, clocks and articles of furniture were supplied.

All under the supervision of Ph. Béland, clerk of works.

IRON FOUNDRY.

On June 24, 1903, a contract was entered into for the construction of this building in St. John Bastion on D'Auteuil street. It is to be of stone, 154 feet by 55 feet, outside measurement, 25 feet in height from floor to eaves, and 36 feet from floor to apex of roof. There is to be an annex 13 feet by 17 feet at one end, to contain lavatories and closets. The roof principals are to be of iron and the roof of wood covered with metal. All the windows are to be grated, and there is to be one entrance at each end. It is intended to heat the building with steam.

Plans, &c., prepared by this department, and works supervised by Ph. Béland, clerk of works.

Contractors for the construction of the building—Dusseau & Pageau.

MARINE AND IMMIGRATION BUILDING, AND QUEEN'S WHARF.

The caretaker's residence was painted and papered inside; a partition was removed and the plumbing repaired, as also the plumbing in the Marine office.

All under the supervision of Ph. Béland, clerk of works.

POST OFFICE.

The plumbing of the water closets was overhauled and a bath and a lavatory basin put in. A portion of the stud partition of the registration office was removed and replaced by a counter and glazed screen; this office was floored in hardwood. The customs postal packets office and the office of the mail conductors were renovated and in part supplied with new furniture, linoleums, &c. The electric lighting and clocks were overhauled and in part renovated. A number of offices were cleaned and painted.

All under the supervision of Ph. Béland, clerk of works.

THREE RIVERS.

POST OFFICE.

A pair of hot water heating furnaces were put in to replace others worn out. The heating coils on ground floor were enlarged and some repairs made to plumbing, &c.

Under the supervision of John Cowan, of this department, engineer.

PROVINCE OF ONTARIO.

CLINTON.

PUBLIC BUILDING.

A contract was entered into on July 28, 1902, for the construction of this building on a lot occupying the re-entrant angle formed by the junction of King and Victoria streets, and the works are now well advanced. It is a 2½-story brick building on a stone basement 39 feet long by 34 feet broad, with a 1-story adjunct 17 feet by 29 feet in rear, and a 4-story brick clock tower 10 feet square facing the junction of the streets. The floors, stairs, partitions and roof are of wood, the roof covering of metal, excepting the deck, which is covered with tar and gravel. The basement is for the heating apparatus and fuel; the ground floor of the main building for the post office, mail

entrance, stairways, water closet and porch, and that of the adjunct for the examining warehouse and collector's office. On the first floor are to be 5 rooms, a bath-room and a water closet room, and in the attic 6 rooms. Heating is to be by hot water.

Plans prepared and work supervised by this department.

Clerk of works—Henry Stevents.

Contractor for construction of building—S. S. Cooper.

Contractors for heating—Martel & Langelier.

DESERONTO.

PUBLIC BUILDING.

This building is completed, and has a hot water heating system installed. Fit tings and furniture for the various departments are being put in.

Plans, &c., prepared by this department.

Clerk of works—John Dalton.

Contractor—Richard Sheehy.

Contractor for heating—P. Leclerc, fils.

FORT WILLIAM.

On July 22, 1902, a contract was entered into for the construction of this building on a plot of ground situated on the east side of May street. It is a 2½-story building, with stone dressings, and on a stone basement 58 feet by 42 feet, having at the south end a 1-story adjunct 18 feet by 23 feet of the same materials. The ground floor contains the post office, vestibules, stairway, brick vault, lavatory and water closet, in the main portion, and the examining warehouse in adjunct; on the first floor are the customs long room, 3 offices, a brick vault, a water closet and a stairway; in the attic are the caretaker's apartments. The floors, stairs, partitions and stairways are wood, the roof covering metal, excepting that the decks are covered with tar and gravel and that the basement flooring is concrete.

Plans, &c., prepared by this department.

Clerk of works—W. S. Rankin.

Contractor—Robert Cameron.

GUELPH.

ADDITIONS TO AND ALTERATION OF PUBLIC BUILDING.

On March 28, 1903, a contract was entered into for these works. The original building, which is situated at the intersection of Wyndham and Douglas streets, facing St. George's square, was commenced in 1874 and completed in 1877. It is intended to remove the roof, carry up the outside walls an additional story surmounted by an attic; add 12 feet to the length of the building, and build a tower 14 feet square and 4 stories high, exclusive of the clock cupola, in front of the middle of the St. George's square façade. The original main stairway from basement to attic, together with all the partitions and brick safes on ground floor are to be removed and new brick safes are to be built on basement, ground and first floors. Of the 12-foot addition to the length, a portion 10 feet in depth is to be a one-story porch, the middle portion is to be a staircase from basement to attic, and the rear a 2-story and basement portion to contain the postmaster's room on ground floor, with a lavatory and water closet on first floor and in basement. In the completed building there will be a main entrance to the post office through the tower, and an entrance to the upper floors by the porch in the addition. The ground floor is to be devoted to post office purposes, the first floor

to the Customs, the second floor to the Inland Revenue, and the third floor to the caretaker.

Plans, &c., prepared by this department.
Local architect—L. C. Wideman.
Contractor—John Kennedy.

KINGSTON.

CUSTOM HOUSE.

Repairs were made to entrance gate, gas, water and plumbing services, locks and furniture under the supervision of Arthur Ellis, architect and clerk of works, Kingston, Ont.

POST OFFICE.

New vestibule doors were put in, new brass signs were supplied, also new flooring in the vestibule and a new truck for transfer of mails. The gas mains were altered and repairs were made to plumbing, gas fitting, heating, newspaper bunks, fittings, &c. All the foregoing under the supervision of Arthur Ellis, architect and clerk of works, Kingston, Ont.

ROYAL MILITARY COLLEGE.

Gymnasium.—This building, which was described in my last report, is now nearing completion. A new hot water heating apparatus is being installed and plans for fittings are prepared.

Plans, &c., prepared by this department, and work supervised by Arthur Ellis, local architect and clerk of works, Kingston, Ont.

Contractors for construction of building—Sullivan & Langdon.

Contractors for heating—McKelvey & Birch.

Residence, Gymnasium—Adjoining the southerly end of the foregoing is a 2½-story building on a stone foundation, 38 feet by 35 feet. There is a basement under the entire building. The building is heated by hot water.

Plans prepared by this department, and work supervised by Arthur Ellis, architect, Kingston, Ont.

Contractors for building—Sullivan & Langdon.

Contractors for heating—McKelvey & Birch.

LONDON.

DRILL HALL.

On December 6, 1902, a contract was entered into for the construction of this building. It is to be constructed of brick with stone dressings and on a stone basement, measuring 252 feet on Dundas street, and 120 feet on Granville street. There are two stories and basement in the Dundas street façade, the middle 50 feet of which is carried up an additional story with octagonal angle bastions ending in circular crenellated towers, and contains the principal entrance to the drill hall. On Granville street there are two stories and unexcavated basement, and at the farther end one story and basement. Hemmed in on three sides by these leantos is the main drill hall, 80 feet by 186 feet, 50 feet from floor to apex of roof, and 35 feet to eaves. In the basement are to be a bowling alley, a dressing room, lavatories and water closets, boiler and fuel rooms, and four store rooms. On the ground floor, besides the main hall, are 8 armouries,, a gunshed, 3 harness rooms, 2 C.O. rooms, 2 Q.M. rooms, 2 officers' rooms, a guard room, a bugler's room, a work room, a spare room, &c.; on the first fioor 2 armouries, a band-

room, a lecture room, a room for each army medical corps and army service corps, a C.O. room, 2 officers' rooms, a sergeant's mess, Q.M. stores and 2 water closets and lavatory rooms. The attic contains 6 rooms and a bath room for caretaker. The roof principals are iron, the partitions brick and floors, stairs and roofs of wood, excepting the floor of basement which is concrete, and the stairs of main hall which are iron. The roof covering of main hall is metal, and that of leantos tar and gravel.

Plans, &c., prepared by this department.

Local architect—F. Henry.

Contractors—Sullivan & Langdon.

OTTAWA.

CENTRAL EXPERIMENTAL FARM.

There were cleaned, tinted and painted 15 rooms among the various buildings.

Bacteriological Laboratory.—This is a 1½ story brick building on a stone basement, surmounted by a wooden roof. It measures 35 feet by 44 feet, and consists of a basement containing a furnace and fuel-room, 2 laboratory rooms, a water closet and a stairway; a ground floor having 3 rooms and an attic, 4 rooms. The basement floor is cement, and the remaining floors wood.

Plans, &c., prepared and works superintended by this department.

Clerk of works—P. Canty.

EASTERN BLOCK, DEPARTMENTAL BUILDING.

There were 6 drop lights installed in the Auditor General's Department, 4 in the Secretary of State Department, 1 in the Justice Department, 1 in the Privy Council office, 2 in the Indian Department, and 3 in the Finance Department; there were new wash basins fitted up—3 in the Auditor General's Department, 2 in the Secretary of State Department, and 4 in the Justice Department; portable electric lamp stands—2 in the Justice Department and 1 in the Indian Department; electric bell connections were wired—2 in the Justice Department, 1 in the Indian Department, and 2 in the Finance Department. A new radiator was fitted up in the Secretary of State Department and a number of shades supplied.

Walls for coal bin, 30 feet long and 10 feet high, were built in boiler house and 3 boilers re-set. One new brick partition was built; plastering in 8 rooms was patched; 4 grates and 1 fireplace were supplied; cement floor in 3 rooms was renovated; 2 doors were cut in brick walls; hardwood flooring was laid in 14 rooms; six new windows and frames were put in; 3 windows were glazed and painted; 105 articles of furniture were repaired and 196 oiled, painted or varnished; 36 rooms were cleaned, tinted and painted; also there were furnished 12 cupboards or shelving, 13 tables, 7 chair cushions, 4 bookcases, 2 desks, 2 rifle racks, 7 brass rods and curtains, 1 screen, 1 cabinet, 2 green baize doors, picture moulding in 2 rooms, cover for 1 sofa and an inclosure for a telephone. Two rooms were altered and renovated.

All done under the supervision of this department.

Mechanical engineer—Wm. King.

Clerk of works—F. Breton.

GOVERNMENT HOUSE.

An addition, 18 feet 6 inches x 16 feet, was made to side of potting shed and fitted with tables and shelves. Tables, table beds, &c., were built in greenhouses, vinery, cold house and rose house, as well as a number of hotbed frames and sashes.

The cow stable and the adjoining store-room had the roof raised and straightened; the cow stable was enlarged and re-fitted, re-floored and re-ceiled; had new cow stalls and loose box fitted up, and new drain and ventilating pipe put in.

The heating apparatus at the cottage had additional coils and radiators put in, as well as a new furnace to replace the original one, which was worn out. and the pipes, coils and radiators were bronzed.

At Government House a coil was put in the servants' hall, a radiator in room No. 15, some gate valves in the carnation and smilax houses and all the pipes, coils and radiators bronzed. The wooden paving in carriage porch was replaced by brick, and the cut stone sill of door raised to suit. The chimney of potting shed was lengthened; firebrick backs were put in 4 fireplaces; 3 cooking ranges re-lined with firebrick, and the terrace granolithic steps repaired. There were supplied 50 lengths of table for entertainments, 4 fancy tables and 153 feet length of tables for curling rink, 12 pairs of trestles, 2 wardrobes, 10 sets brass bed-room furniture, 6 screens, 2 cabinets, 1 cupboard, 4 stepladders, 3 waiter trays, 2 book racks, 5 window screens, 3 sliding ventilators, 2 glass doors and 2 cases for hose. Repairs were made to 2 cabinets, 5 bookcases and a large number of chairs, among the number 175 cane-seated chairs. Four ranges and 22 stoves with pipes were cleaned and repaired, and a large number of renewals of parts of ranges made; 564 inches of kitchen coppers were re-tinned and repaired; 14 closet cisterns were overhauled and a new flushometer and 4 sink tanks put in. The slate sink in kitchen, as well as the water service throughout, were repaired and in part renovated. New transformers were installed in the electric plant, while the bell service was kept in good order and repair. The basement flooring, which was cut when laying drain under tennis court, was laid anew; 800 lineal feet of 9-inch tile pipe, with 4 cedar curb clean-outs were put in to connect the drainage with the city sewer on Dufferin road; also 492 feet of 6-inch and 153 feet of 4-inch tile in subsidiary drains. A connection was made for surface water with iron grating and cedar curb 2 feet 6 inches x 2 feet 6 inches ; 200 lineal feet of 1¼-inch water supply pipe was laid from stable to byre, and a branch to workshops, in lieu of the 1-inch pipe taken out.

The roof of log cabin was renovated, the toboggan slides were repaired and strengthened, and a fence 265 feet long by 2 feet in height built to protect the ivy at the front of hall. Of the fences, 35 lineal feet of iron fence, with cut stone pillars, were built at lodge, as well as 30 feet of wooden picket fence, 554 feet lineal of wooden fence were rebuilt, as well as one large gate; two pairs of new gates were built and remainder of the fence and gates had minor repairs effected; 85 feet lineal of plank crossings were laid, and the sidewalks throughout repaired and in part renovated.

At the hall there were 899 yards distempered, 4,744 yards painted and 304 yards stained and varnished, in addition to 175 chairs stained and varnished. There were 1,168 yards of painting done throughout the various subsidiary buildings; 1,640 feet superficial of glass was re-glazed in greenhouse roof, as well as 24 hotbed sashes and the glazing of all the buildings repaired. There were 2,425 yards carpet, 1 large and 9 small rugs and 19 squares lifted, cleaned, repaired and relaid. A large quantity of crockery and glassware was supplied, also some table and bed-room napery.

A new float was placed under large boathouse, which was repaired, straightened and strengthened. Two new doors, as well as floor rollers and wire corridor screens were put in new boathouse. Floors were laid in curling rink when required, wires strung for Chinese lanterns, and tables, tents and decorations attended to

A large variety and number of gardening tools and necessaries were supplied, for kitchen and for flower garden, as well as bulbs, plants, seeds, &c.

Some of the hedges were grubbed out, some grading, sodding and tree planting was done, and the main avenue was gravelled, rolled and otherwise improved. The ice-houses were packed with ice. The roofs, paths, slides, rinks, &c., were cleared of snow by the departmental staff, by whom the grounds, lawns, gardens and plant-houses were maintained.

The usual periodic cleaning and the packing and unpacking were done; arrangements for and attendance on entertainments were furnished, and the rinks, slides, &c., kept in order.

Work carried out and maintained under the supervision of this department by the departmental staff.

Clerk of works—Wm. H. Hutchison.

GEOLOGICAL MUSEUM.

The hot-water furnace was repaired and the piping thereof partly renovated. The laboratory was fitted up for gas lighting; 42 auer lights and 9 gas brackets were placed as required, and a 6-pipe gas radiator was installed in the laboratory.

The annex was fitted up with wooden partitions, doors, stairs, floors, tables, &c. The steps of the museum stairway were fitted with rubber pads; a room in basement was fitted up for laboratory purposes; nine rooms were cleaned, tinted and painted, as well as all the interior of the annex; a large partition was glazed; twenty pieces of furniture were repaired and eighteen pieces painted or oiled and varnished.

Work done under the supervision of this department.

Mechanical engineer—Wm. King.

Clerk of works—F. Breton.

DEPARTMENT OF INTERIOR, QUEEN STREET.

Changes were made in electric bell wiring, and an additional connection made with messengers' room. Some new electric lights were added and some shades supplied under the supervision of Wm. King, mechanical engineer.

IMMIGRATION COMMISSIONER'S OFFICE, QUEEN STREET.

Six chemical fire extinguishers were supplied; 10 drop lights and 1 portable lampstand were installed, also electric bells for one of the offices, under the supervision of Wm. King, mechanical engineer.

LANGEVIN BLOCK.

An electric clock in the Interior Department was connected with the telegraph lines outside. There were installed in the Interior Department 15 droplights, in the Post Office Department 36 droplights, and in the Agriculture Department 16 droplights. In the Interior Department 3 portable lampstands, 3 in the Post Office Department and 8 in the Agriculture Department. One 8-light electrolier was fitted up in the Interior Department; a motor fan and a rotary pump in the Agriculture Department and 2 electric bell connections in the Interior Department. Telephone wiring was done in the Agriculture Department and the Post Office Department, the electric lighting in the Agriculture Department was readjusted and a heating coil changed in the Interior Department. Twenty-three rooms were cleaned, tinted and painted; 3 brick partitions, 4 wood and 1 glazed, were erected; 5 sets of shelving were supplied, exclusive of 60 roller shelves; 6 cupboards and pigeonhole cases were supplied, as also 30 tables, 6 map cases, 2 bookcases, 3 chairs, 5 chests of drawers, 8 cabinets, 3 stepladders, 1 chest, 3 deflectors, 3 ventilators, 8 chair cushions, 3 green baize doors, 3 window poles and 7 brass rods and curtains. Picture moulding was fitted up in 3 rooms, cement base in 2 rooms, doors cut in 2 rooms and fireplaces repaired in 2 rooms. One hundred and ninety pieces of furniture were repaired, and one hundred and forty oiled, varnished, painted or altered. One partition was painted, 1 was varnished, and 2 sofas were re-upholstered. The brickwork of 4 hotwater furnaces was renovated, and plaster patched in 6 rooms. All under the supervision of the department.

Mechanical engineer—Wm. King.

Clerk of works—F. Breton.

LABOUR BUREAU.

Bell wiring was done for 3 rooms, with call bells, &c.; 1-3 light electrolier, 1-2 light electrolier and 5 droplights were installed.

Four rooms were cleaned, tinted and painted; 3 rooms were fitted with picture moulding; the vault was fitted up with pigeonhole cases and shelving; 6 stepladders and 4 cupboards were supplied; 15 pieces of furniture were oiled and varnished and 20 pieces altered.

Work done under the supervision of the department.

Mechanical engineer—Wm. King.

Clerk of works—F. Breton.

MILITARY STORE BUILDING.

The building was wired for electric light by the departmental workmen; speaking tubes were installed, and a porcelain sink fitted up and connected. All under the supervision of Wm. King, mechanical engineer.

MAJOR'S HILL PARK.

A 2-story kiosk is in process of construction—to consist of a basement of stone to be used as a tool house, 17 feet x 26 feet and 13 feet in height, surmounted by a covered wooden pavilion of like size surrounded, by a gallery 6 feet in breadth, supported on brackets or corbels built into the stonewalls below. The pavilion will be constructed of ornamental open framing, somewhat gothic in treatment.

General repairs were made to the old greenhouses; some new benches were supplied and those in use repaired. For the better distribution of water, cast-iron pipe, 4-inch and 3-inch, was laid (1,220 feet), with gate valves, hose connections, &c.

Work done under the supervision of this department.

Mechanical engineer—Wm. King.

Clerk of works—F. Breton.

ROYAL OBSERVATORY.

A contract for the construction of this building was signed on August 9, 1902, and the work is in progress.

The building was described in my report of last year. Plans, &c., prepared and work superintended by this department.

Clerk of works—P. Canty.

Contractor—Theophile Viau.

REPAIRING STREETS, ETC.

The roadway between Rideau street and the canal was graded and macadamized, and a turfed sloping terrace formed between this roadway and the park. The wooden sidewalk at the Printing Bureau was removed and replaced by a new one of granolithic. Planking of yard at Geological Museum and at Printing Bureau was renovated.

Scraping, cleaning and general repairs were done to the various roadways, footpaths and streets under the control of the department. Rubbish, scrapings and ashes were removed from the east block, west block, parliament buildings, the workshops, printing bureau, the museums, the several rented buildings and the various streets and deposited at Nepean Point; the grass at printing bureau, Wellington street, two bridges, fisheries museum and geological museum was kept clipped, and the ashes removed from the boiler houses; the roadways, sidewalks, footpaths, roofs and yards kept clear of snow during the winter.

Work done by the departmental staff, C. Leblanc, foreman.

PARLIAMENT BUILDING.

A downward plenum system of ventilation, to be used either independently or as an auxiliary to the existing system, was installed over the Commons chamber. The air is taken through the ventiduct turrets at the north end of the House and driven by fans, attached to electric motors, through a tempering chamber from which it passes, through the ceilings over the gallery, into the House. The Senate bathroom in basement was entirely renovated and fitted up with porcelain baths, showers, &c. There were furnished throughout the building, 1-5 light electrolier, 1-4 light and 1-3 light; an electric cooking apparatus was put in at the office of the Deputy Speaker of the Commons; 13 droplights and 6 wall brackets were put in, also 6 water closets, 3 urinals, 13 wash basins, 4 radiators, 600 feet of pipe in steam coils, exclusive of that for ventilation, as well as a quantity of wiring for telephones, bells, &c.

A new porch was erected at the messengers' entrance. One new hardwood floor was laid. A quantity of painting, tinting and papering were done, requiring the services of one workman for 11 months, and one man was continuously employed for the entire year taking up and putting down carpets, making repairs, &c., in connection therewith. One hundred and twenty-three pieces of furniture were repaired, 86 were painted or varnished, and the following articles were supplied, viz.: 8 wardrobes,, 17 cupboards, 3 chair cushions, 1 book case, 2 sets shelving, 1 chest, 1 telephone closet, 4 rods and curtains, 1 screen, 12 newspaper files, 200 rollers and 1 ventilator.

Work done under the supervision of this department.

Mechanical engineer—Wm. King.

Clerk of works—F. Breton.

PARLIAMENT GROUNDS.

Repairs were made to woodwork and drains generally throughout the grounds. Some new seats were supplied, and a new stairway built down hillside at west end of Lovers' Walk.

The water mains for use in watering the grass were overhauled, and some valves, &c., added. A new water main was laid from the main at Supreme Court.

Work done under the supervision of this department.

Mechanical engineer—Wm. King.

Clerk of works—F. Breton.

POST OFFICE.

The sub-basement fronting on the canal was finished for use as an examining warehouse for the Customs. The stone walls were lined with terra cotta, with a 4-inch cavity between the terra cotta and stone wall plastered; the vaulted ceiling was plastered, the floor was concreted, the middle compartment finished with a cement floor, and the lateral compartments floored in wood. A hot water heating system was put in with the furnaces, and a brick inclosed coal bin at rear of the middle compartment. A stairway was constructed from the sub-basement to the basement. The middle and the south end of the basement were overhauled, the brick division walls were removed and glazed partitions substituted; counters and fittings were put in, as well as new flooring. Three new water closets were fitted up. An electric elevator, with a travel from basement to attic, was constructed in the well hole of the stairway, at the south-western angle of the building. A fan driven by an electric motor was placed in attic inclosed in a specially built room lighted by a skylight, and from this a tube containing a hot water coil is carried down to ground floor ceiling for using a plenum system of ventilation for the post office. Two new washbasins and one new sink were put in.

Works carried out under the supervision of this department.

Mechanical engineer—Wm. King.

Clerk of works—S. Adams.

PRINTING BUREAU.

One of the steam boilers was re-set in brickwork; the roof of the shop was re-shingled and repairs to woodwork and furniture generally done, which kept one carpenter constantly employed; also a plumber and a steamfitter, at repairs in their line, about one-third of the year.

Work done under the supervision of the department.

Mechanical engineer—Wm. King.

Clerk of works—F. Breton.

SUPREME AND EXCHEQUER COURT BUILDING.

The electric bell wiring was re-arranged, some new bells added and a new washbasin fitted up and connected. One of the heating boilers was re-set in brickwork.

The library was removed to another room and new shelving supplied therefor, as well as for one of the rooms in basement. One of the Exchequer Court rooms was fitted up; 4 rooms, passage and stairway were cleaned, tinted and painted; 20 pieces of furniture were repaired; 15 pieces were cleaned, varnished and painted, and the following articles supplied, viz.: 3 tables, 2 brackets, 5 rods and curtains, 1 bookcase and 3 green baize doors.

Work done under the supervision of this department.

Mechanical engineer—Wm. King.

Clerk of works—F. Breton.

WESTERN BLOCK, DEPARTMENTAL BUILDING.

Gas connection was made for use of standards in Inland Revenue Department. Portable electric lamp stands were installed, 2 in Railways and Canals Department, 3 in Marine Department, 8 in Public Works Department and 1 in Militia Department; electroliers, 2 of 2 lights in Public Works Department; droplights, 5 in Railways and Canals Department, 16 in Marine Department, 11 in Customs Department, 3 in Public Works Department and 2 in Militia Department; motor fans, 2 in Railways and Canals Department, 1 in Public Works Department, 2 in Militia Department and 3 in Inland Revenue Department. Four additional radiators and one new coil were fitted up; electric bell connections were made, 3 in Railways and Canals Department, 3 in Marine Department, 3 in Public Works Department and 1 in Militia Department. Speaking tubes were put in for Customs Department, 1 washbasin in Militia Department, and some re-arrangement of electric lights carried out and a number of shades supplied. 56 rooms were cleaned, tinted and painted; 9 rooms had hardwood floors laid; 4 wooden and one glass partition were built; 5 rooms had picture moulding; 451 articles of furniture were repaired; 228 articles of furniture were oiled, varnished or painted; 2 doors and frames and 2 gun carriages were supplied, as well as the following articles of furniture, viz.: 16 bookcases, 17 chests, 15 file cases, 30 cupboards, 7 desks, 10 tables, 4 deflectors, 36 newspaper files, 575 packing boxes, 125 photo. frames, 14 brass rods and curtains, 34 chair cushions, 5 screens, 20 drawing boards, 16 pairs of trestles, 13 stepladders, 4 slopes, 2 gun racks, 3 stands, 1 truck, 152 map rollers, 1 telephone cupboard, 1 green baize door and 5 map racks; 3 wooden tanks were built and 950 panes of glass put in.

All the foregoing under the supervision of this department.

Mechanical engineer—Wm. King.

Clerk of works—F. Breton.

BUILDING AND GROUNDS GENERALLY.

In addition to the works mentioned in the foregoing, there are innumerable smaller works, e.g., there were 275 items of repair done by the roofers, and propor-

tionately much more in connection with the other trades. Besides all these, in connection with the various other buildings, the property of the government, there are similar works of repair, painting, furnishing, tinting, &c., in connection with a number of rented buildings; also such works as repairs to and renewals of coal and other sheds, as well as works of a general character, such as the erection and taking down of porches, the winter boarding of outside steps, the moving of furniture, the putting up and taking down of summer blinds and winter sashes, the beating of carpets, minor repairs to glazing, painting, woodwork, furniture, &c., the removal of the snow from the grounds, buildings, roads and foot-paths, which work was done by the departmental staff.

SARNIA.

PUBLIC BUILDING.

This building, which was described in a previous report, is in progress, and is expected to be completed during the next fiscal year.

Plans, &c., prepared by this department.

Clerk of works—Marcus R. Burrows.

Contractor for building—Geo. A. Proctor.

Contractors for heating—Alex. Mackay & Co.

TORONTO.

CUSTOM HOUSE.

A portion of the wall, about 175 feet, was under-pinned with concrete and brick set in cement. A settlement crack in south wall was made good, including the provision of some new stone sills and mullions.

Work performed under the supervision of S. G. Curry, architect.

EXAMINING WAREHOUSE.

The first floor was wired throughout for incandescent electric light, under the supervision of S. G. Curry, architect.

POST OFFICE.

An addition was constructed to the rear of the main building, and alterations made to the building generally. *These works were expected to be completed during the fiscal year, but were delayed by strikes in the building trades.* A scoria block pavement was laid in the north-west yard. Two rooms were provided on the first floor for the postmaster, the end of the first floor corridor partitioned off for use as a waiting room, and a large room on same floor divided by a partition into two, one for the inspector and the other for his staff of clerks. These four rooms were cleaned and painted.

Works carried out under the supervision of S. G. Curry, architect.

POSTAL STATION 'A.'

A new concrete floor was laid throughout the old portion of the building, and the interior was cleaned and whitewashed throughout, under the supervision of S. G. Curry, architect.

POSTAL STATION 'B.'

A few minor alterations and repairs were effected under the supervision of S. G. Curry, architect.

POSTAL STATION 'C.'

On May 21, 1902, a contract was entered into for the construction of the building on a site fronting on Queen street, with Lisgar and Bell streets on either side and a lane in rear. It is a 2-story brick building with stone dressings and on a stone basement, the rear one-half of which is excavated and finished as a basement. It has a frontage of 79 feet by a depth of 74 feet 6 inches. There is a brick safe in basement and one on ground floor, and brick partitions in basement. The columns and beams supporting the floors are of iron, the ground floor and first floor partitions and floors as well as the stairs and roof are wood, and the floor of basement concrete. The cornice is metal, and the roof covering of felt, tar and gravel. The basement contains the furnace and fuel-room, a brick safe, a closet-room and the stairway. The ground and first floors are for post office purposes. Heating is by hot water.

Plans, &c., prepared by this department and work supervised by S. G. Curry, architect.

Clerk of works—Wm. Forbes.

Contractors for construction of building—F. D. Brown and Geo. Love.

Contractors for hot water heating system—Harrison & Robertson.

RECEIVER GENERAL'S AND INLAND REVENUE BUILDINGS.

The treasury vault was increased in size, the additional space being taken from the private office adjoining.

All under the supervision of S. G. Curry, architect.

PROVINCE OF MANITOBA.

WINNIPEG.

CUSTOM HOUSE.

New macadam pavement boulevard and sidewalk were laid on York street. Additions and repairs were made to plumbing, a cork carpet and a desk were supplied, and repairs were made to gas fitting, plumbing and porch door.

Work done under the supervision of J. Ernest Cyr, clerk of works, Winnipeg.

DOMINION LANDS OFFICE.

Additions were made to plumbing and a few articles of furniture supplied.

Work supervised by J. Ernest Cyr, clerk of works, Winnipeg, Man.

EXAMINING WAREHOUSE.

The heating and plumbing were entirely renovated. Alterations of and additions and repairs to the building were effected.

Work supervised by J. Ernest Cyr, clerk of works, Winnipeg, Man.

IMMIGRATION HALL.

New bells, new hospital and kitchen ranges, new furniture (beds, tables, washstands, &c.), were fitted up and furnished. A floor was laid in hospital, new utensils

furnished to kitchen. A typewriter desk was supplied and repairs done to glazing, painting and carpentry.

All under the supervision of J. Ernest Cyr, clerk of works, Winnipeg, Man.

POST OFFICE.

The plumbing was renovated throughout, the elevator doors were altered. A quantity of furniture was supplied to the post office, the bag rack was repaired, and some minor repairs made.

All under the supervision of J. Ernest Cyr, clerk of works, Winnipeg, Man.

NORTH-WEST TERRITORIES.

CALGARY, ALTA.

COURT HOUSE.

The hot water furnaces were overhauled, the water service of the building was connected with that of the town, and some minor repairs effected, under the supervision of Paul Paradis, resident engineer.

IMMIGRATION BUILDING.

New plumbing and drainage were put in, new stoves were furnished, and the storehouse and fuel shed painted, under the supervision of Paul Paradis, resident engineer.

POST OFFICE.

The general delivery was altered and improved, and new stone steps were built at the main entrance, under the supervision of Paul Paradis, resident engineer.

CARNDUFF, ASSA. EAST.

COURT HOUSE.

A contract was entered into on February 11, 1902, for this building, which was described in my report of last year, and which is now completed, fitted up with a hot water heating apparatus, and furnished ready for occupation.

Plans, &c., prepared by this department.

Clerk of works—J. H. Taylor.

Contractors for construction of building—J. M. Harrington & Co.

Contractors for heating system—F. & R. Colter.

EDMONTON, ALTA.

JAIL.

Tenders are received for the construction of this building, which is to be situated east of the town site and between it and the Saskatchewan river. The building is to consist of a 2½-story administration block 69 feet 6 inches frontage by 52 feet 8 inches depth, having a 2-story and basement extension in rear 56 feet deep by 52 feet 8 inches wide, and having in front a 3-story tower 14 feet square. The basement will have an adjunct 20 feet by 17 feet for fuel room and one 5 feet by 14 feet on either side of the tower. The administration block basement is to contain a boiler room, a fuel room, a laundry, a cellar and a number of storerooms; the ground floor a guard

room, a jailer's office, stores and a kitchen; the first floor, 2 work-rooms, a parlour, a dining-room and a kitchen. The cell wing is to have 14 cells on each of the three flats. The walls and partitions are to be of brick on concrete footings. Concrete will also be used for the cell fronts and the floors—those in administration block to be covered with wood. The roofs are to be wood covered with metal.

Plans, &c., prepared by this department.

MACLEOD, ALTA.

COURT HOUSE.

On October 8, 1902, a contract was entered into for the construction of this building, which is to be of brick, 2½-stories, with stone dressings and on a stone basement, measuring 56 feet by 34 feet, exclusive of projecting porches. The partitions, floors, roofs and stairs are wood, excepting the cell partitions which are brick and the basement floor which is concrete. The ground floor contains 2 vestibules, 2 stairways, a passage, 2 brick vaults, a guard room, a sheriff's office, a clerk's office, a storeroom, a kitchen, 3 cells for prisoners and 3 projecting porches. There are 4 entrances, 1 in front, 1 in rear and 2 on the right side. On the first floor, mid-length, is the court room, occupying all but 16 feet at either end and extending up into the attic. At one end of the court room are rooms for judge, jury and bar, and at the other end a room for witnesses. In the attic the space at the rear of the court room is finished as a spare room.

Plans and specifications for a hot water heating apparatus are in course of preparation.

Plans, &c., prepared by this department.

Clerk of works—C. Genge.

Contractor—Patrick Navin.

REGINA, ASSA. WEST.

COURT HOUSE.

A complete set of fittings were fitted up in vault and some general repairs made, under the supervision of John Morrison, clerk of works.

CUSTOM HOUSE.

A steel safe was supplied, the building was wired and fitted up for electric lighting, and the eavestroughs and cesspool were repaired.

Work done under the supervision of John Morrison, clerk of works.

GOVERNMENT HOUSE.

The gardener's house was cleaned, painted and papered, and an addition made thereto. New fencing and gates were erected.

Work done under the supervision of John Morrison, clerk of works.

LANDS OFFICE.

A well was bored, a pump and piping put in; the building was wired for electric lighting and some furniture supplied.

All under the supervision of John Morrison, clerk of works.

POST OFFICE.

Additions were made to the fittings, some new flooring was laid, the building was wired for electric lighting, the interior was cleaned and kalsomined, and a clock, stove, &c., furnished.

All under the supervision of John Morrison, clerk of works.

SASKATOON, SASK.

IMMIGRATION BUILDING.

This building, which was described in my last report, was completed and fitted up for occupation during the fiscal year. A steel range and utensils were supplied the kitchen.

Plans, &c., prepared by this department.
Clerk of works—John Morrison.
Contractor—James Leslie.

YORKTON, ASSA. EAST.

COURT HOUSE.

A contract for the construction of this building was entered into on October 4, 1902. It is to be a 2-story wooden building, on a stone foundation 51 feet by 28 feet exclusive of a projecting wing 20 feet by 10 feet for front entrances and stairway to court-room. The basement is designed for the heating apparatus and fuel; on the ground floor are guard-room, N.C.O. room, constables' room, kitchen, 3 cells, 3 vestibules, 2 stairway halls and 4 entrances, 1 to the court-room stairway and 3 to ground floor, 1 front and 2 rear. On the first floor are the court-rom, 35 feet by 25 feet, the stairway hall, and rooms for the judge, jury and barristers. In the rear are two detached wooden buildings, one a coal shed 20 feet by 10 feet, and the other a latrine 12 feet by 10 feet.

Plans, &c., prepared by this department.
Clerk of works—B. Johnson.
Contractor—Thomas Fulton.

BRITISH COLUMBIA.

KAMLOOPS.

ARMOURY.

This building, which was described in my report of last year, is completed.
Plans, &c., prepared by this department.
Clerk of work—A. Thompson.
Contractor—D. H. Campbell.

KASLO.

ARMOURY.

This building was described in my report of last year. It is now occupied.
Clerk of works—John Milligan.
Contractor—D. J. Maclaughlin.

NANAIMO.

PUBLIC BUILDING.

A new sink was fitted up in gas inspector's office, a counter and screen in the Inland Revenue office, and the first floor walls were kalsomined inside and the woodwork painted.

Work done under supervision of Wm. Henderson, of this department, Victoria, B.C.

NELSON.

ARMOURY.

This building is completed.

Plans, &c., prepared by this department; construction supervised by Wm. Henderson, of this department, Victoria, B.C.

Clerk of works—J. A. Macdonald.

Contractor—W. G. Gillett.

PUBLIC BUILDING.

This building, which was described in a previous report, is now completed and being fitted up for occupation.

Plans, &c., prepared by this department; construction supervised by Wm. Henderson, of this department, Victoria, B.C.

Clerk of works—J. A. Macdonald.

Contractors for the construction of building—Viau & Lemoine.

Contractor for hot water heating apparatus—R. J. Nott.

NEW WESTMINSTER.

PUBLIC BUILDING.

Fittings and furnishings were supplied and fitted up in the offices of the Dominion lands agent, the Crown timber inspector and the postmaster. A clock was supplied to the post office.

Work supervised by Wm. Henderson, of this department, Victoria, B.C.

REVELSTOKE.

ARMOURY.

Building completed under the supervision of Wm. Henderson, of this department, Victoria, B.C.

Plans, &c., prepared by this department.

Clerk of works—J. M. Kellia.

Contractor—John Kernahan.

ROSSLAND.

PUBLIC BUILDING.

Building completed and in process of fitting and furnishing.

Plans, &c., prepared by this department.

Work supervised by Wm. Henderson, of this department, Victoria, B.C.

Clerk of works—R. W. McGregor.

Contractor for building—Thos. Bradbury.

Contractor for heating—W. E. Vanstone.

VANCOUVER.

DRILL HALL.

A drain was laid to take surface water from the shooting gallery and alley floors. Work supervised by Wm. Henderson, of this department, Victoria, B.C.

PUBLIC BUILDING.

An addition 40 feet by 24 feet was erected for the use of the Post Office Department. New quarters were rented in the Lewis building, adjacent to the post office on Granville street, and the examining warehouse, express and postal package office and dead letter office temporarily installed. The roof of the examining warehouse and of the main building, as well as the gutters and down pipes were repaired throughout.

Work supervised by Wm. Henderson, of this department, Victoria, B.C.

VICTORIA.

OLD CUSTOM HOUSE.

The plumbing was repaired and the water service pipes renovated, under the supervision of Wm. Henderson, of this department, Victoria, B.C.

PUBLIC BUILDING.

A new entrance was cut in outside wall and fitted with door, and a room fitted up for reception and despatch of foreign mails. An opening between bonded warehouse and corridor in basement was cut and fitted with door. The entire examining warehouse has been re-fitted and re-shelved for use of customs postal packages. Shelving for post office was fitted up in basement, and a clock supplied to the post office; the archway leading to main staircase and elevator was fitted up with doors and glazed fanlights. A new bath and bath boiler were fitted up and connected for the use of the caretaker. A new desk was supplied to the customs long room, cork carpet to the savings bank and new armature and controller to the freight elevator motor. The double door at examining warehouse entrance was changed to a single one.

All done under the supervision of Wm. Henderson, of this department, Victoria, B.C.

OLD POST OFFICE.

A new felt gravel roof was put on and the plumbing was repaired. A portion of the outside woodwork was repainted.

Work done under the supervision of Wm. Henderson, of this department, Victoria, B.C.

WILLIAM'S HEAD.

QUARANTINE STATION

A complete electric lighting plant, comprising 400 incandescent and 10 arc lights, was installed and an addition made to the boiler house to accommodate the new machinery. Additional water mains and hose connections for domestic supply, and for fire protection were put in. New dormer windows were added to the roof of the disinfection shed. The new laboratory was fitted up and furnished. Fences inclosing the

residences of the captain and engineer were built. The attics of residences of captain, of caretaker and of watchman were divided into rooms, plastered and finished A new sink was fitted up in superintendent's kitchen, a new mantel in captain's residence, and a new small boat purchased for the use of the station. The new disinfection chamber was painted and some minor repairs done.

Work supervised by Wm. Henderson, of this department, Victoria, B.C.

YUKON TERRITORY.

DAWSON.

PUBLIC BUILDINGS

The foundations of the several public buildings at Dawson, which were injured by thawing were made good and buildings were fitted up with eave troughs and iron ladders. A fireproof vault was constructed at the court house.

Work done under the supervision of A. A. D. Bertrand, superintendent of works and buildings.

GENERALLY.

Repairs and alterations have been executed and sundry articles of furniture, &c., provided, and cleaning, painting and other improvements carried out in connection with a number of buildings not herein reported.

D. EWART,

Chief Architect.

PART IV

CHIEF ENGINEER'S REPORT

ON

HARBOUR AND RIVER WORKS

INCLUSIVE OF

GRAVING DOCKS AND DREDGING OPERATIONS

ALSO

ROADS, BRIDGES AND SURVEYS THROUGHOUT THE DOMINION

REPORT OF THE CHIEF ENGINEER

DEPARTMENT OF PUBLIC WORKS OF CANADA,
CHIEF ENGINEER'S OFFICE,
OTTAWA, December 22, 1903.

FRED. GÉLINAS, Esq.,
Secretary,
Department of Public Works.

SIR,—I have the honour to submit the annual report on the various works under my charge during the fiscal year ended June 30, 1903.

These works comprise the construction and repair of wharfs, piers, breakwaters, dams, wiers, bank and beach protection works; the improvement of harbours and rivers by dredging; the construction, maintenance and operation of government dredging plant; the construction and maintenance of graving docks; the construction, maintenance and working of slides and booms; the construction and maintenance of interprovincial bridges and approaches thereto, and of bridges on highways of federal importance in the North-west Territories and the maintenance of military roads; also hydrographic and ordinary surveys and examinations, inclusive of precision levelling and geodetic measurements which are required for the preparation of plans, reports and estimates; the testing of cements, &c.

I have the honour to be, sir,
Your obedient servant,

EUG. D. LAFLEUR,
Acting Chief Engineer.

During the fiscal year 1902-03, surveys, examination or inspections were made at the following places :—

NOVA SCOTIA.

Amaguadus Pond, Cape Breton County.
Abraham River, Yarmouth County.
Annapolis, Annapolis County.
Baddeck, Victoria County.
Baxter Harbour, King's County.
Bayfield Breakwater, Antigonish County.
Bear River, Annapolis County.
Beaver River, Digby County.
Benoit Cove, Antigonish County.
Big Harbour, Victoria County.
Boularderie Centre, Victoria County.
Breton Cove, Victoria County.
Burlington, Hants County.
Canada Creek, King's County.
Cape Cove, Digby County.
Caribou Island, Pictou County.
Chebogue Harbour, Yarmouth County.
Chegoggin, Yarmouth County.
Cheticamp Harbour, Inverness County.
Cheverie, Hants County.
Church Point, Digby County.
Colloden, Digby County.
Comeau's, Digby County.
Comeau's Hill, Yarmouth County.
Comeauville, Digby County.
Cow Bay, Cape Breton County.
Cribbin's Point, Antigonish County.
Descousse, Richmond County.
Digby, Digby County.
Eastern Passage, Halifax County.
Economy, Colchester County.
Eel Brook, Yarmouth County.
Eel Cove, Victoria County.
Finlay Point, Inverness County.
Five Islands, Colchester County.
Folly Village, Colchester County.
Grand Narrows, Cape Breton County.
Grand River, Richmond County.
Granville Centre, Annapolis County.
Hampton, Annapolis County.
Harbourville, King's County.
Hantsport, Hants County.
Herring Cove, Halifax County.
Hubbard's Point, Yarmouth County.
Iona, Victoria County.
Kelly's Cove, Yarmouth County.
Ketch Harbour, Halifax County.
Kingsport, Kings County.
L'Archevêque, Richmond County.
Little River Harbour, Yarmouth County.
Margaretville, Annapolis County.
McKay's Point, Victoria County.
McNair's Cove, Antigonish County.
Melbourne, Yarmouth County,
Meteghan, Digby County.
Meteghan River, Digby County.
Middle East Pubnico, Yarmouth County.
Middle River, Victoria County.
Musquodoboit, Halifax County.
Necum Teuch, Halifax County.
North River, Victoria County.
Ogden's Pond, Antigonish County.
Parker's Cove, Annapolis County.
Pembroke, Yarmouth County.
Pereaux, King's County.
Pictou Harbour, Pictou County.
Pictou Light Beach, Pictou County.
Pipers Cove, Cape Breton County.
Plymouth, Yarmouth County.
Porter's Lake, Halifax County.
Port au Pique, Colchester County.
Port George, Annapolis County.
Port Lorne, Annapolis County.
Port Maitland, Yarmouth County.
Port Shoreham, Guysboro County.
Prospect, Halifax County.
Ragged Head, Guysboro County.
Rocky Bay, Richmond County.
Sandy Cove, Digby County.
Sandford, Yarmouth County.
Scott's Bay, King's County.
Sheet Harbour, Halifax County.
Short Beach, Yarmouth County.
Sluice Point, Yarmouth County.
Sober Island, Halifax County.
Soldier's Cove, Richmond County.
South Cove, Victoria County.
South Gut, Victoria County.
South Maitland, Hants County.
Spry Bay, Halifax County.
Stony Island, Yarmouth County.
Tracadie, Antigonish County.
Three Fathom Harbour, Halifax County.
Tiverton, Digby County.
Tusket, Yarmouth County.
Victoria, King's County.
Victoria Beach, Annapolis County.
Wedge Point, Yarmouth County.
Wentworth, Hants County.
West Arichat, Richmond County.

Livingston's Cove, Antigonish County.
Liverpool, Queen's County.
Lower East Jeddore, Halifax County.
Lower West Pubnico, Yarmouth County.
Lower Washabuck, Victoria County.
Maitland, Hants County.
Malignant Cove, Antigonish County.
West Bay (south), Richmond County.
West Chezzetcook, Halifax County.
White Water, King's County.
Windsor, Hants County.
Wolfville, King's County.
Yarmouth Bar, Yarmouth County.

PRINCE EDWARD ISLAND.

Amherst Head, Prince County.
Bay Fortune, King's County.
Belfast, Queen's County.
Blooming Point, Queen's County.
Brooks Pond, King's County.
Beach Point, King's County.
Campbell's Cove, King's County.
Canoe Cove, Queen's County.
Cove Head, Queen's County.
Cascumpec, Prince County.
French River, Queen's County.
Higgins Shore, Prince County.
Morell River, King's County.
Morrisons Beach, King's County.
Montague River, King's County.
Miminigash Harbour, Prince County.
Prim Island, Queen's County.
Pownal Bay, Queen's County.
Panmure Island, King's County.
Rustico Harbour, Queen's County.
Richmond Bay, Prince County.
Sturgeon Pier, King's County.
St. Mary's Bay, King's County.
St. Andrews Point, King's County.
Victoria Pier, Queen's County.
Vernon River, Queen's County.
West Point, Prince County.
Wood Islands, Queen's County.

NEW BRUNSWICK.

Anderson's Hollow, Albert County.
Back Bay, Charlotte County.
Bathurst, Gloucester County.
Bay du Vin, Northumberland County.
Belliveau, Westmoreland County.
Belyea's Cove, Queen's County.
Black Brook, Northumberland County.
Black River, St. John County.
Brown's Flats, St. John County.
Buctouche, Kent County.
Burnt Church, Northumberland County.
Campbellton, Restigouche County.
Cape Tormentine, Westmoreland County.
Caraquet, Gloucester County.
Chockfish, Kent County.
Clifton, King's County.
Cole's Point, Westmoreland County.
Dalhousie, Restigouche County.
Dunham, King's County.
Edgett's Landing, Albert County.
Evandale, King's County.
Flewellings, King's County.
Fort Dufferin, St. John County.
Gagetown, Queen's County.
Gardiner's Creek, St. John County.
Grand Anse, Gloucester County.
Grimross Canal, Queen's County.
Harvey, Albert County.
Hatfield Point, King's County.
Herring Cove, Albert County.
Holderville, King's County.
Hopewell Cape, Albert County.
Jenkin's Cove, King's County.
Long Wharf, St. John County.
Lord's Cove, Charlotte County.
Lower Newcastle, Northumberland County.
Middle Southampton, York County.
Miramichi River, Northumberland County.
Miscou, Gloucester County.
Mispec, St. John County.
Mizonette, Gloucester County.
Moss Glen, King's County.
Negro Point, St. John County.
Neguac, Northumberland County.
Oak Point, Northumberland County.
Oromocto, Sunbury County.
Partridge Island, St. John County.
Plaster Rock, Victoria County.
Point du Chêne, Westmoreland County.
Point Wolfe, Albert County.
Quaco, St. John County.
Quaco West, St. John County.
Red Store, Charlotte County.
Reid's Point, King's County.
Richibucto, Kent County.
Shippegan, Gloucester County.
St. Andrews, Charlotte County.
St. George, Charlotte County.
St. John Harbour, St. John County.
St. Louis, Kent County.
St. Mary's, Kent County.
Stonehaven, Gloucester County.
Tynemouth Creek, St. John County.
Upper Gagetown, Queen's County.
Upper Salmon River, Albert County.
Westfield, King's County.

Lameque, Gloucester County.
Little Salmon River, St. John County.
Long Point, King's County.
Whickham's, Queen's County.
Wilson's Beach, Charlotte County.

QUEBEC.

Anse à Grosse Roche, Saguenay County.
Canton Fabre (Témiscamingue).
Cap Rouge, Quebec County.
Chambord (Lake St. John).
Contrecœur, Chambly County.
Deschambault, Portneuf County.
Desjardins, Pontiac County.
Discharge of Lake St. John.
East Templeton, Wright County.
Grondines, Portneuf County.
Les Escoumains, Saguenay County.
Mattagami River Route, Hudson Bay.
Mistook, Chicoutimi County.
Péribonka River, Chicoutimi County.
Portage du Fort, Pontiac County.
Portneuf, Portneuf County.
Quebec Harbour.
Rivière des Prairies, Laval County.
Rivière Jésus, Laval County.
Rivière du Lièvre, Labelle County.
Rimouski, Rimouski County.
River Saguenay, Chicoutimi County.
Roberval, Chicoutimi County.
St. François I. O., Montmorency County.
St. Gédéon, Chicoutimi County.
St. Jean des Chaillons, Lotbinière County.
St. Jérôme, Chicoutimi County.
Tadousac, Saguenay County.
Varennes, Chambly County.

ONTARIO.

Algoma, Algoma County.
Amherstburg, Essex County.
Barrie, Simcoe County.
Barry's Bay, Renfrew County.
Blind River, Algoma County.
Bracebridge, Ontario County.
Colborne Harbour, Northumberland County
Cumberland, Russell County.
Gananoque, Leeds County.
Gore's Landing, Northumberland County.
Grand River Bridge, Haldimand County.
Hiawatha Landing, Peterboro County.
Huntsville, Muskoka County.
Jones Creek, Leeds County.
Jordan Harbour, Lincoln County.
Kincardine, Bruce County.
Meaford, Grey County.
Midland, Midland County.
Orillia, Simcoe County.
Owen Sound, Grey County.
Pembroke, Renfrew County.
Peninsula, Algoma County.
Point Edward, Lambton County.
Point Traverse, Prince Edward County.
Port Burwell, Elgin County.
Port Perry, Ontario County.
River aux Canards.
River St. Lawrence, Kingston to Prescott.
Rosedale, Victoria County.
Sarnia, Lambton County.
Sault Ste. Marie, Algoma County.
Scugog River, Ontario County.
Spanish River, Algoma County.
Sydenham River, Bothwell County.
Thessalon, Algoma County.
Toronto Harbour.
Trenton, Hastings County.
Wiarton, Bruce County.

MANITOBA.

Meadow Portage.

BRITISH COLUMBIA.

Columbia River, vicinity of Spellamacheen and Galena.

PROVINCE OF NOVA SCOTIA

AMAGUADEUS POND.

Amaguadus Pond, Cape Breton county, lies on the northern side of East Bay, the eastern arm of the Great Bras d'Or lake, and is distant about 3 miles from Benecadie Point, at the entrance to and 16 miles from the head of the bay.

It is a large sheet of water, about 1 mile in length and ¼ of a mile in width, with a depth of from 2 to 4 fathoms, separated from the bay by a beach of gravel overlying clay, of from 100 to 200 feet in width, and about 4 feet high above the summer level of the lake. The outlet is at the eastern end of the beach, but as it is open only for short periods after freshets, and then is available to small boats only, the pond is not of any practical benefit to the inhabitants.

The sum of $2,000 was appropriated for expenditure, during 1902-3, towards the construction of a wharf. The site selected is on the outside of the beach, about 600 feet from its eastern end. The proposed work is to consist of blocks with intervening spans, and extend to 11 feet at low lake level; it will be 128 feet in length and 20 feet wide, with an L on the eastern side of the outer end, 20 by 20 feet, constructed of round timber, with creosoted timber substructure with outer faces of outer blocks close-sheathed, and its cost is estimated at $4,000.

Of the amount voted the sum of $485.60 was expended during the fiscal year in procuring the most of the materials required in the construction of the wharf.

ARISAIG.

Arisaig, Antigonish county, is on the southern shore of the Northumberland strait, about 15 miles to the eastward of Merigomish, the nearest harbour.

The pier built by the provincial government, prior to Confederation, came under the charge of the federal government in 1870. It consisted of an approach 245 feet in length, and an outer portion 174 feet in length, varying from 40 to 44 feet in width. The approach is constructed with stone retaining walls filled in with stone, brush and clay, and the outer portion is of squared native timber crib-work, sheathed on the outer faces.

Repairs and improvements were made from time to time, including the construction, during 1889-91, of a squared native timber extension, 100 feet in length. In 1896-97-98 the seaward face of the pier was strengthened and a block, 24 by 24 feet, built of native squared timber, was placed on the seaward face of the outer end to strengthen the facework, and to secure and retain a proposed extension of the stone talus, in which some 250 cubic yards of large stone were placed.

In 1898-99 the stone talus along the seaward face of the pier was completed by placing 482 cubic yards of large stone, and some covering and fenders were renewed.

During the severe north-west gale of September 12, 1900, the work suffered slight damage, and the sum of $292.18 was expended in reconstructing the top of the roadway on the approach for a distance of 75 feet, and to an average depth of 2 feet; in replacing 40 pieces of plank covering, 100 lineal feet of centre curbing over the covering, 75 lineal feet of cap-timbers and 35 pieces of sheathing, and in raising the talus by depositing 50 cubic yards of large stone upon it.

The outer end of the work built by the local government, for a distance of 105 feet, has been in a bad condition for some years. Temporary repairs have been effected from time to time, but as the timber is old and decayed and does not hold the fastenings, it

has been found advisable to renew the top down to low water mark, and to reconstruct it with new materials, and the sum of $900 was appropriated for expenditure during 1902-3 towards that purpose. Of the amount appropriated the sum of $899.81 was expended in reconstructing a portion of the inner face of the outer end of the block, 49 feet in length, 20 feet wide, and to an average depth of 10 feet; in renewing 30 pieces of sheathing and 65 lineal feet of cap, and in procuring some of the materials required for the reconstruction of the balance of the old block.

The depth of water at the outer end of the pier, at low water spring tides, is 10 feet Spring tides rise 5 feet.

Total expenditure to June 30, 1903, including refund of $541.41 to provincial government, is $35,928.88.

BAILEY'S BROOK.

Bailey's Brook, Lismore, Pictou county, is a large stream emptying into the Strait of Northumberland at a point about 10 miles to the eastward of the entrance to Merigomish harbour, and 6 miles to the westward of Arisaig.

This brook brings down during freshets a large volume of water to the sea, but in the summer season it runs nearly dry, and its mouth becomes obstructed by sand cast up by the sea during easterly winds. In the last ½ mile of its course it flows through alluvial soil in a channel of from 50 to 80 feet in width, with a depth of about 3 feet at low water springs.

The sum of $2,000 was voted for expenditure during 1902-3 towards the opening of a permanent channel through the beach, to permit boats to enter the mouth of the brook for shelter, and for the construction of channel protection works on the outside.

The works proposed to effect the improvements are estimated to cost $5,000, and consist in cutting a channel through the beach, about 290 feet in length and 30 feet wide in the bottom, with a depth of 2 feet at low water springs, or 6½ feet at high water ; the construction of a shear dam on the western side of the channel 130 feet in length and 12 feet wide, founded at low water, and protected with sheet-piling on the channel face and outer end; and the construction of a breakwater, 240 feet in length and 20 feet wide on top, extending out into 3 feet at low water, and constructed of round timber cribwork, off the beach, 30 feet to the eastward of the channel, to prevent the sand from closing it, and to serve at the same time as a boat landing.

The amount appropriated by Parliament at the session of 1902 was expended during the fiscal year 1902-3 in procuring most of the timber required for the construction of the protection works.

BASS RIVER.

Bass River, Colchester county, is a farming and manufacturing village of about 500 people, situated on the north side of Cobequid bay, the eastern arm of the Bay of Fundy. It is half way between Truro and Parrsboro, or about 28 miles from each place. In 1894-95 the department built, by contract, at a cost of $3,240, a public wharf of pilework, 210 feet long, 40 feet wide, with an L at the outer end 55 feet long and 40 feet wide. At the outer end of the L it was found necessary to build a small block of cribwork, containing 8,000 cubic feet, on account of the hard nature of the bottom preventing the piles from being driven to their proper depth. Along its outer face the work is 26 feet high, giving a depth of 22 feet at H.W.O.S.T.

In the fiscal year 1901-02 the department expended the sum of $1,099.11 in extending the pile-wharf built in 1894-5. The extension is 40 feet square, substantially built of pilework, and giving the wharf the form of a T. A small freight shed was also built on the wharf for the accommodation of local shippers and merchants.

ER No. 19

e sum of $56.06 was expended in enlarging the freight shed on the

BEAR RIVER.

of Bear River, situated at the head of navigation, 5 miles above the
way and railway, which are near the mouth of the river, is an im-
perous settlement, partly in Annapolis and partly in Digby county,
the boundary between the two counties. Large quantities of piles,
mber are annually shipped to South America, the West Indies and
s, and the volume of shipping may be judged by the fact that the
of which there is a swing span, are opened from 300 to 400 times in
passage of vessels.

e sum of $3,000 was expended in removing the upper portion of an
ighway bridge, which was rebuilt by the provincial government about
a site about 100 feet further up stream. This old pier bottom, which
a depth of 5 feet below low water, spring tides, was so close to the
vas a source of danger to vessels passing up and down. The dropping
n stream side of the swing span of the highway bridge, was also re-
ial pilework, the new pier being 180 feet long, 25 feet wide, and from
h, strongly built of pile bents, well braced, fendered and bolted, pro-
ing posts and rings, and with three rows of hardwood walings on the
the total expenditure of $3,000, the sum of $349.17 was expended in
piles and timber for the rebuilding of the dropping pier on the upper
way bridge.

e sum of $1,611.35 was expended in rebuilding the dropping pier on
de of the Victoria highway bridge. The work consists of a piece of
y built pile wharfing, 180 feet long, 16 to 27 feet wide and 18 to 25
ng the site of the old dropping pier, which was so far decayed and
ne limnoria as to be no longer safe or serviceable.

penditure by the department up to June 30, 1903, is $4,612.35. Spring
t.

BIG POND.

'ape Breton county, is on the south side of East Bay, an arm of the
lake, about 13 miles from the head of the bay, and 25 miles from
lney.

so called on account of the existence here of a large sheet of water,
he bay by a beach.

1-75 a cutting was made through the beach, from the bay into the
des protected with cribwork, but there being no large streams dis-
e pond the slight rise and fall of the tide (about 1 foot) did not pro-
cour to keep the opening clear, and it soon filled up with sand.

span wharf, 260 feet in length, was constructed during 1887-88-89,
of native timber, in a few years it was destroyed by the teredo; the
rried away by ice, and it was decided to abandon it.

eport was submitted on the construction of a new wharf. Two sites
nd estimates were attached for the cost of the wharf on each site:
versity of opinions the site for the new wharf was not decided upon
903.

13, 1903, instructions were received to prepare plans and specifica-
struction of a wharf on the eastern site, and they were submitted

Tenders for the construction of this wharf were asked for in May, 1903, but up to the end of the fiscal year the work had not been let.

The only expenditure was that incurred in calling for tenders, and amounted to $84.79.

BROOKLYN.

Brooklyn, Queen's county, or Herring Cove, as this place was formerly called, is situate on the eastern side of Liverpool harbour. Owing to the existence of a sand bar, and the contracted shape of the harbour, this cove has proved to be the only safe anchorage in the bay, after being properly protected. In 1879, the department constructed a breakwater at this place which cost $68,412.47, but for the last eight or nine years it has been of no practical utility. Owing to the presence of the teredo, the logs of the cribwork were eaten away and the entire structure became wrecked or practically so, and on account of the stone ballast having fallen out into the harbour, the old work became a menace to navigation, rather than a protection to shipping. About ¼ mile to the eastward of this breakwater, lies a cove at the mouth of which, prior to Confederation, the provincial government of Nova Scotia had constructed a wharf, which was permitted to fall into a state of decay. In the year 1899-1900 the department began the construction of a new wharf upon the same site, which could only be completed in 1901-02, at a total cost of $2,468.38. In 1900, the approach to this wharf was renewed and raised 3 feet, the old work, consisting of solid continuous cribwork, 158 feet long and 32 feet wide, was rebuilt for a height of 6 feet at the top. During 1901-2 the wharf was also extended 50 feet, the work being built of a uniform width of 32 feet wide and a height of 23 feet at the outer end. This extension was constructed of pile trestle bents, placed 10 feet centre to centre, well fendered, braced and waled and moreover close-piled along its head and seaward side. The traffic at this wharf having increased very much since it was rebuilt, a sum of $556.09 was applied in 1902-03 in further enlarging the structure, and thus providing additional berth-room. The wharf was widened at the head by 24 feet for a length of 32 feet from the outside face shorewards. This lateral enlargement consists of pile trestle-bents, placed 8 feet apart, centre to centre, well braced, waled and fendered. It is believed the wharf will now accommodate all the shipping that is likely to call at this place, as it now has two good berths for vessels, one at its head and another on its inner side.

BOULARDERIE CENTRE.

Boularderie Centre, Victoria county, is on the southern side of the Great Bras d'Or Channel, about 8 miles to the westward of its entrance into the Atlantic ocean, and 10 miles to the eastward of its entrance into the Little Bras d'Or lake.

On April 25, 1901, a contract was entered into for the construction of a wharf, which was completed on June 30, 1902.

The wharf is 164 feet in length and 20 feet in width, with an L at the outer end, 200 feet by 20 feet, and consists of an approach of stone, clay and gravel, 10 feet long, of a crib abutment, 30 feet long ; of two crib-work blocks 20 by 20 feet, and of an outer block 24 by 40 feet, with 20 feet openings between the blocks, spanned and covered over. The abutment and the blocks constructed of round timber, are creosoted up to high water, protected all around with fenders, and the faces of the two outer blocks with close sheathing.

The depth at low water along the channel face is 13 feet, spring tides rise 2 feet.

During the last fiscal year the sum of $2,499.79 was expended in opening a road, passable for teams, from the wharf to the highway, a distance of 2,100 feet, and for payments due on the work done by contract during the previous year.

The total expenditure on this work to June 30, 1903, is $5,524.61.

BURLINGTON.

, Hants county, with a population of about 350 people, is a farming miles north of the county town of Windsor, on the right bank of the etcook river.

the department expended the sum of $3,499.99 in constructing a public al shipping purposes. The work, which is built of blocks and spans, is d 25 feet wide. In the whole work there are nine blocks, from 11 to 20 m of wharf, and from 6 to 27 feet in height. The spans, which have a of 13 feet, are 8 in number. The outer end of the work which, includ- face length of 59 feet, is 25 feet high, and at L. W. O. S. T. has a t of water.

the sum of $1,590.79 was expended in completing the road approach, in l freight shed on the wharf, and in filling with solid cribwork the four having been found that southerly winds drove the sea through the open- ssels alongside to strike heavily against the wharf. Spring tides rise 40 feet.

xpenditure to June 30, 1903, is $5,090.58.

CANADA CREEK.

reek, King's county, also called Black Rock, is a small fishing illage of about 150 people, on the south shore of the Bay of s east of Digby Gut, and 8 miles west of Hall's Harbour. The harbour o piers or breakwaters, built one on either side of a small stream. That , which is entirely detached from the shore, serves merely as a break- built by the department in 1878-9 at a cost of $3,000. It is 150 feet de on top, and from 12 to 15 feet high, substantially built of round log faced, well ballasted and fendered. The breakwater on the western side, feet long, which serves both as a breakwater and landing pier, was built ration at the joint expense of the inhabitants and the provincial gov- built of round log cribwork, the seaward side being protected by close tted spars. In 1874 it was extensively repaired at a cost of $2,500. In pairs were made, and a new block 57 feet long by 10 wide was built on de of the shore end. In the winter of 1889-90 the outer 100 feet in pletely wrecked, and other minor damage caused by severe gales. The he structure caused the gravel to wash around its end and fill up the s in the bed of the stream along the eastern side. In 1892-3 the depart- ew block of cribwork on the outer end of the old work, 50 feet long, 14 op, and from 8 to 11 feet high between the outer end of the existing emains of the old. The block was totally destroyed in November, 1899. xpenditure of $1,928.09 was made in repairing the work and in building feet long, 30 feet wide, and at the outer end 28 feet in extreme height. he sum of $1,205.18 was expended in completing the new block, in extend- breakwater, begun the previous year, and in taking down and rebuild- 60 feet of the retaining wall on the east side of the mouth of the creek, ork being of an average height of 10 feet and width of about 12 feet.

he sum of $499.96 was expended in thorough repairs to the outer end breakwater, which was in a dilapidated condition and endangering the

nditure to June 30, 1903, including refund of $550 to the provincial $13,519.02.

was transferred to the control of the Department of Marine and Fish- 2, 1888.

CAPE AUGET.

Cape Auget, Richmond county, is the southern promontory of Madame island, and separates the harbour of Arichat from Petit de Grat Inlet, and forms the south-eastern side of Arichat harbour.

The sum of $500 was voted for expenditure during 1901-2 on a boat harbour at Herbine's Cove, on the north-western side of the cape, and about 1 mile to the eastward of Marache Point, on the east side of the southern entrance into Arichat harbour.

The cove is from 100 to 150 feet in width, and about 600 feet in length (at high water), and is formed by an outlying island, connected on its southern end with the mainland by a narrow gravel and shingle beach. The entrance is from the north-east through a narrow channel obstructed by a bar, nearly dry at low water.

Out of the amount appropriated the sum of $495.67 was expended in the construction of a small breakwater, 40 feet long, 16 feet wide, and extending out to low water, on the western side of the cove, and in improving by hand dredging the channel leading into it.

During the fiscal year 1902-3 the sum of $912.83 was expended in the construction of an addition to the breakwater, 40 feet long, 20 feet wide, and extending out into 9 feet at low water. Spring tides rise 5 feet.

Both sections of the work were constructed of round native timber, laid open-faced, properly fendered and filled in solidly with ballast to the top, which is not covered in, but levelled off with large flat stones.

Total expenditure to June 30, 1903, is $1,408.50.

CAPE COVE.

Cape Cove, or Cape St. Mary, Digby county, is situated on the east coast of the mouth of the Bay of Fundy, near the entrance of St. Mary's bay. It is 19 miles north of Yarmouth, and 27 south of Weymouth. It has a population of about 150 people, engaged chiefly in fishing; it is one of the best fishing stations on the coast of St. Mary's bay, cod, haddock and herring being caught in great abundance.

A breakwater for the protection of the fishing fleet was begun about the year 1840, and built in sections by the inhabitants, aided from time to time by small grants, amounting in all to $1,200 from the provincial government. In 1881-3, the department expended $4,499.47 in making extensive repairs and renewals, part of the work under these appropriations being the construction of a buttress built of round-log crib-work, 50 feet long and 15 feet wide to support the middle of the southern face of the work, where a breach had been made by the eating away of the face logs by the limnoria and the action of heavy seas. The work is 300 feet long, 25 feet wide on top, and 24 feet high at the outer end. In 1900-1, the sum of $750 was expended in rebuilding a gap in the middle of the work that had been made by the storm of March 1, 1900.

In 1901-2, the sum of $3,999.97 was expended in building a new block in extension of the old breakwater, 30 feet long by 34 feet wide, and also in building a re-enforcing block on the western or seaward side, 121 feet long, 10 feet wide and from 17 to 24 feet high. The outer new block is from 24 to 26 feet high. A new top was also built on the old work for the whole of the 121 feet widened by the new block.

In 1902-3, the sum of $3,000 was expended in extensive repairs to the breakwater. The seaward side of the shore end for a length of 135 feet and width of 12 feet, and for a height of 7 to 18 feet, was taken down and thoroughly rebuilt, and the whole seaward face of the outer end was close-sheathed.

Spring tides rise 18 feet, neaps about 15 feet.

The total expenditure to June 30, 1903, is $14,618.83, including a refund to the provincial government of $1,304.38 in 1887-88.

APER No. 19

CAREY'S PASSAGE.

ssage, Richmond county, is situated on the northern side of the western ennox Passage, and connects it with the basin of River Inhabitants.
he existence of a gravel beach across the channel, near its entrance into ng boats could only use the passage during high water, and in conse- ermen lost much time and suffered many inconveniences.
out of the amount voted for rendering the passage available for boats tide, the sum of $807.04 was expended in cutting a channel through n deepening the old channel, for a distance of 400 feet, to low water, truction of a cribwork channel protection, 80 feet long and 10 feet wide, side of the cut through the beach.
fiscal year ended June 30, 1903, the sum of $999.90 was expended in work commenced during the previous year. The channel is 950 feet in eet wide in the bottom, and carries a depth of 2 feet at low and 8 feet prings, and the channel protection works at the inner end of the channel g and 10 feet wide on the eastern, and 68 feet long on the western side.
as proved of great benefit to the fishermen of the district.
of the works is $1,806.94.

CARIBOU ISLAND.

and, Pictou county, is on the Northumberland strait, 5 miles to the entrance to Pictou harbour.
rbour, sheltered by Caribou island and a smaller island lying to the is 6 miles in length and 1 mile in average width. The principal en- the two islands, has a depth of only 4 feet at extreme low water, and n the mainland and the western extremity of Caribou island are dry water, except in a few small channels. Spring tides rise 6 feet, neaps

of brush and stone, 1,330 feet in length and 18 feet in width, between nd the western extremity of the island, commenced in 1890-91, was etion of work undertaken in 1894-95, built up to the level of the ordi- over 560 feet of its length, and about 1½ feet below that level over the feet. In 1897 a breach was made through the work near its western e the bottom was scoured to a depth of about 4 feet at low water, and ow portion, 560 to 1,300 feet from the west end, was disturbed in places. 1901-2 the breaches in the brush and stonework were filled in and the about the level of the ordinary high water.
fiscal year 1902-3 the sum of $650.06 was expended in continuing the brush and stonework, which was brought up to an average height o bove extreme high water.
nditure to June 30, 1903, is $3,802.47.

CHARLESVILLE.

e, Shelburne county, is a small village of about 300 inhabitants, the of whom results from the pursuit of the fishing industry. It is situate f the head of Pubnico and 10 miles west of Barrington, at almost the astern part of Pubnico harbour. The place being exposed to the heavy which are the strongest winds felt in this vicinity, previous to the the government pier no protection whatever was afforded these fisher gaged altogether in the lobster fishery with small boats during the firs t month of the year, when they have almost all the heavy weather t Besides this inconvenience they moreover have had no landing facilitie

for their supplies without trucking a distance of from 1½ to 3 miles, which greatly enhanced the cost of these articles. During the fiscal year 1902-3 a breakwater and wharf combined was built at this place, which serves both these purposes, at a total cost of $2,700.20. This breakwater is built at the southern end of a small cove immediately inside a reef by which it is partly protected, the work being most substantial. It has a total length of 261 feet, comprising a rock-bank approach 46 feet long and 215 feet in length of continuous, round-log, stone-filled and well fendered and fastened cribwork with a top covering of 3-inch plank. It is 20 feet wide on top throughout, and has a height of 21 feet at the outer end, where there is a depth of 7 feet at low water ordinary spring tide. It is believed the structure will meet the requirements of this locality, and prove to be of great value and assistance to the fishermen.

CHEGGOGIN.

Cheggogin, Yarmouth county, is a small fishing and farming village, with a population of a couple of hundred people, situated on the Bay of Fundy coast, about 5 miles north of Yarmouth. The little bay of the same name is ½ of a mile deep north and south, and about the same width east and west, fully exposed to the south-west but sheltered from every other quarter. It is dry at low tide, but at high water has a depth of from 12 to 14 feet.

Over half a century ago a breakwater was built by the proprietors of the marsh in a position immediately west of the present work. It was totally destroyed about 20 years ago, not a vestige of it being visible to-day.

In the winter of 1895-6 the inhabitants, aided by a grant of $45 from the municipal council, built a small breakwater 80 feet long, 12½ feet wide, and from 6 to 11 feet high, on the south side of the stream's outlet. In 1899-1900 the sum of $598.12 was expended in lengthening the breakwater by the addition of a new block 60 feet long, 15 feet wide, and from 10 to 13 feet high. It is cheaply but substantially built of round-log cribwork of the usual type.

In 1900-1 the breakwater was further extended a length of 51 feet, at a cost of $692.21. The new block is 11 feet wide on top, with side batters of 1 in 12, and from 12 to 13 feet high. In addition to the extension, a piece of the shoreward end of the work was rebuilt, 30 feet long, 8 feet wide, and from 7 to 9 feet high, at a cost of $88.03.

In 1902-3 the sum of $76.58 was expended in raising the shore end of the breakwater a height of from 2 to 3 feet, for the purpose of preventing the gravel and sand from washing over and filling up the mouth of the stream where the fishermen keep their boats.

Spring tides rise 16 feet, neaps 13 feet.

Total expenditure to June 30, 1903, is $1,454.94.

CHETICAMP POINT.

Cheticamp Point, Inverness county, is the southern extremity of Cheticamp island about 1 mile to the eastward of a beach of shingle closing the south end of Cheticamp harbour, which lies between the island and the mainland, and is entered from the north.

During the year 1902-3, tenders were invited for the construction of a breakwater 370 feet in length, but up to its closing a contract had not been entered into.

The expenditure incurred in calling for tenders was $123.38.

CHEVERIE.

The village of Cheverie, Hants county, with a population of about 350, is situated on the right or east bank of the estuary of the River Avon, where it debouches into the Basin of Minas, some fifteen miles north of Windsor, the county town. It is a good farming district, but the principal trade of the place is in the quarrying and

sum to the United States. The quantity, which varies according to
in the American market, ranges from 20,000 to 60,000 tons per an-
about 100 feet long, was built here many years ago by the provin-
In 1873-74 the Department of Public Works lengthened it 70 feet,
38.88, this extension being of open round log cribwork, like the old
a further extension of 182 feet was built at a cost of $5,000. This
of square timber, close-faced, 25 feet high and 25 feet wide on top,
as the former, and the sides batter 1 in 12. In 1885 the sum of $600
effecting some much needed repairs to the shoreward side of the
the department built a detached breakwater 300 feet distant from
the wharf for the purpose of protecting the latter from northerly
was exposed. This piece of work consists of solid cribwork 130 feet
e on top, 35 feet wide at base and about 23 feet high, built of square
-faced on all sides. The seaward side to a height of 10 feet below
ring tides has a slope of 1 to 1, the sloping faces being covered with
The block is provided with mooring posts to assist vessels coming to
harf, as well as with ring bolts and ladders. In 1887-88 the sum of
96-97 the sum of $100, was expended on extensive repairs. On the
n length the flooring, guards and some of the fenders were renewed;
eet the guards and a few fenders were renewed; on the next 105 feet
d new ties, stringers, guards, flooring and fenders; on the next 50
most of the flooring was renewed. 205 feet in length of the wharf
above lengths was raised in height from 1 to 3 feet. In all, 69 new
ced and 250 tons of new ballast was put in.
year ended June 30, 1902, the sum of $768.23 was expended in the
ber for the extension of the detached breakwater built in 1884 as

he sum of $2,999.34 was expended in the construction of an extension
breakwater. The new block is 100 feet long, 23 feet wide on top, 22
ng on the landward side 1 in 4 and plumb on the seaward face, with
igh. It is substantially built of stone-filled cribwork, and close
seaward side.
f June, 1903, the work was completed to within 4 or 5 feet of the top.

CHURCH POINT.

nt, Digby county, is situated on the south-east side of St. Mary's
th-west from Weymouth. It has a population of 200 people, engaged
fishing.
which consists of a wharf, a retaining wall and a breakwater, appear
lt between the years 1856 and 1866, at the joint expense of the pro-
ent and the inhabitants, the expenditure of the government having

e department expended the sum of $2,000, the inhabitants contribut-
ount, in repairing the northern face and in building an L, 72 feet
wide at right angles to it, with the object of preventing gravel from
the outer end. The movement of gravel, which is from south to
s been more or less a difficulty and detriment to this port. In 1890-1,
g worked around the outer end of the breakwater and formed a bar
nce to the loading berth, a small groyne, 40 feet long and 24 feet
projecting at right angles from the outer or north-west corner of the
e groyne was extended in 1894-5 a further distance of 30 feet, and
again extended by a length of 120 feet and width of 16 to 25 feet by
22 feet, all of round log cribwork. The sluice gates at the head of

the dock, where the fresh water stream makes its exit, were rebuilt in order to cause the stream to scour away the gravel from alongside the wharf front.

In 1900-1 the sum of $800 was expended in rebuilding 63 feet in length of the wharf front, 16 feet high and from 10 to 20 feet wide, 35 feet of this length being close-piled. The sluiceway was entirely rebuilt and fitted with double lifting gates instead of single; the floor of the sluice was lowered 5 feet, and an apron, extending 13 feet up stream and 50 feet down stream, was constructed of 3-inch plank, well spiked to heavy stringers, bedded in close packed stone, and close-piled at both ends to prevent scour.

In 1902-3 the sum of $1,800 was expended in rebuilding 134 feet in length of the wharf wall. The new piece is 15 feet wide at bottom, 18 feet wide at top and 20 feet high, solidly built of stone filled cribwork.

The total expenditure to June 30, 1903, is $12,357.81, including a refund of $1,692, to the provincial government in 1887-8. This work was transferred to the control of the Department of Marine and Fisheries in June, 1888.

Spring tides rise about 22 feet.

COMEAU'S BROOK.

Comeau or Comeau's Brook, Digby county, is the name of a portion of that continuously settled district on the shore of St. Mary's bay, between Yarmouth and Weymouth. It is one mile north of Saulnierville, and six miles north of Meteghan river. Many years ago a breakwater had been constructed here, probably by private parties, but it was very inadequate and had been allowed to go to decay. During 1901-2, the department expended the sum of $997.31 in repairs and renewals. The shoreward end of the old breakwater was rebuilt a length of 60 feet by 24 feet wide, by 10 to 12 feet high, in substantial round-log cribwork, well sheathed, fendered, ballasted and bolted, and with a break 4 feet high.

In 1902-3, the sum of $1,202.37 was expended in extending the breakwater. The new extension is 30 feet long by 28½ feet wide and 15 feet high at the outer end. There was also built on the shore end a new block 30 feet long, 11 feet wide and from 7 to 9 feet high, to retain the approach. The whole of the new work has been substantially built of round-log cribwork, well fendered, ballasted and close sheathed.

The total expenditure to June 30, 1903, is $2,192.62.

COMEAU'S HILL.

Comeau's Hill, Yarmouth county, is the name of a straggling settlement of some two or three hundred people, situated on the west side and close to the extremity of the peninsula between Chebogue harbour and Goose Bay, about fifteen miles south-west from Yarmouth, the county town. It is conveniently situated as regards the fishing industry of a considerable district, and is the headquarters of a fleet of some 40 boats.

In 1900-1, the department expended the sum of $1,000 in building a breakwater, 135 feet long, 16 to 20 feet wide on top, and 12 feet high at the outer end. The whole work is constructed of granite boulders, the inner or harbour face being of split boulders laid with a smooth battered face of about 1 to 12, the outer or seaward face of round and irregular shaped rocks with a slope of 1½ to 2 in 1. The work, so far as it goes, answers its purpose admirably, and it is a permanent and satisfactory job.

In 1902-3, the sum of $599.72 was expended in partially rebuilding the outer 50 feet in length of the breakwater, which had been damaged by an abnormally high tide and a north-west gale on November 24, 1901.

Spring tides rise 12 feet, neaps 10 feet.

Total expenditure to June 30, 1903, $1,599.72.

APER No. 19

COMEAUVILLE.

le, Digby county, is a straggling settlement of some 200 or 300 people. ing and farming, situated on the eastern shore of the Bay of Fundy, 35 st of Digby, the county town.

, which was built many years ago, before Confederation, was partially or ed about 1878, and thereafter abandoned by the department. During 15 years, it was partially repaired by private parties. It appears that was destroyed the inhabitants petitioned for a grant of $4,000 to $5,000 e of restoring the work, and the money was voted. Before the work vever, Mr. Campbell, then federal member for the county, died, and the erted to repairing the wharf at Little Brook, which the inhabitants seem 'Comeauville' or 'Comeau,' for the purpose of deceiving the depart- ring the appropriation; the departmental records show expenditures at of $3,135.56 in 1887-8, but it is probable that these amounts were really Brook.

the sum of $4,346.02 was expended in the renewal, repair and improve- ork. A gap of 75 feet in length between the shore and the outer block olid cribwork to replace the old dilapidated work destroyed by the storm 00. This new block is from 20 to 24 feet in width, from 4 to 18 feet in ghly well and substantially built of round-log cribwork, filled solid with eathed on the seaward side with 6-inch sawed spruce. On the seaward ak was erected 4 feet high. An extension to the breakwater was built, 3 feet wide and from 20 to 22 feet high. This new block is strongly built ribwork of the usual type, close-sheathed on the seaward side and the fendered and filled solid with ballast. In addition to this, the top of or 57 feet shorewards was rebuilt to a height of 5 to 8 feet. The bottom was sound enough to carry a new top, while the upper part was much ractically a wreck.

the sum of $2,000 was expended in restoring the shoreward portion ter, of which the outer end was built in 1900-01. The new work is 238 eet wide by 14 to 19 feet high, thoroughly well built of round log crib- th ballast and well fendered and bolted.

the sum of $1,998.49 was expended in extending the breakwater by a feet long, 28 feet wide and from 22 to 28 feet high, substantially built cribwork, close-sheathed on the seaward face and outer end.

les rise 21 feet, neaps 17 feet.

enditure to June 30, 1903, $11,484.65.

COW BAY (PORT MORIEN).

(Port Morien), Cape Breton county, is on the eastern coast of Cape about 18 miles to the eastward of the entrance to Sydney Harbour.

ater, built by the owners of the Gowrie Coal Mine on the north side ne under the charge of the department in 1873. It originally extended 7 feet at low, or to 23 feet at high water, and was about 44 feet in ea of the basin inclosed between it and the shipping pier of the Gowrie e property of the Dominion Coal Company, was 17 acres, 10 acres of epth of from 9 to 17 feet at low water.

kwater was seriously damaged during the great gale of August 24, ve repairs and improvements were made nearly every year up to 1895. kwater consisted of 220 feet of old work protected on the seaward side shingle and boulders. 360 feet of old work 44 feet in width, with a e work and a break on the seaward side built over the remains of the 793 feet of inner work with counterforts and connecting outer face

works. The inner and outer face works were from 30 to 20 feet apart; they were connected by tiewalls and the spaces were filled with earth and stone ballast.

In 1895 and 1896, 260 feet of breakwater (1,114 feet from the shore end outward) was carried away down to from 2 to 6½ feet below low water; the outer face works from 1,114 feet from the shore end inward were badly damaged, and ballast was washed over the works and deposited in the dock along the inner face from 581 feet to 1,114 feet from the shore end.

Between the years 1897 and 1901 a large amount was expended in repairing and strengthening the breakwater from 1,114 feet from the shore end inwards. The outer works were repaired and strengthened by filling in the face chambers to about half tide level with concrete and by close-piling; the stringers and covering of the inner work from 581 feet to 1,114 feet from the shore end were renewed, and the work of placing a talus of concrete blocks on the seaward side was commenced.

During the fiscal year 1902-3 the sum of $10,005 was expended in repairing and strengthening the breakwater—the new work including the reconstruction of 87 feet of outer face work, 24 feet in width and 15 feet in average height, of which the outer face chambers were filled with concrete and the outer face close-piled; and in the reconstruction, to within 1 foot 4 inches of the top, of part of outer end, 49 feet in length, 24 feet in width and 15½ feet in average height, which remains to be completed and to have the outer face chambers filled with concrete and the outer faces close-piled.

Total expenditure to June 30, 1903, including $25,000 for purchase of breakwater, is $231,610.56.

CRIBBIN'S POINT.

Cribbin's Point, Antigonish county, is on the west side of St. George's bay, 8 miles to the southward of Cape George, and 5 miles to the northward of the entrance to Antigonish harbour.

The wharf, completed in 1892-3, extending 300 feet in a southerly direction from the point, has an approach 195 feet in length. It is 20 feet in width, for a distance of 120 feet from the inner end, and 30 feet for the remaining 180 feet; the inner 50 feet being of stone, and the outer 250 feet of close faced native timber cribwork, fully ballasted.

The face timbers having become weakened by the ravages of the teredo, during the years 1896-97-98-99, the outer end, the seaward face for a distance of 20 feet, and the inside face for a distance of 10 feet, from the outer end, were close-piled with creosoted timber; a talus of quarried stone was placed on the seaward side; the work was reballasted where necessary, and a timber 'break,' 100 feet in length and 2½ feet in height, above the cap timber, was constructed on the seaward side of the inner end of the wharf to prevent the sand from washing on to the work.

A sum of $1,000 was appropriated for expenditure during 1899-1900, towards the construction of an extension, and the amount was expended in obtaining a portion of the creosoted timber required.

During 1900-1 the sum of $3,079.98 was expended in procuring the balance of the timber required for the extension and in repairing the outer end of the old work, which was almost destroyed during the severe gales in the autumn of 1900. The repairs consisted in the reconstruction of the top for a distance of 60 feet and to a depth of 8 feet, and in placing heavy quarried stone in the talus on the seaward side of the reconstruction work.

As the sand at the end of the wharf, at which originally there were 11 feet of water, at low water, had made up to a height of about 6 feet since its completion, it was deemed advisable to found the extension on the original bottom, and for that purpose the dredge 'George McKenzie' was engaged from May 30 to July 12, 1900, in dredg-

ER No. 19

ndation for the new block and the approaches thereto, at a cost of

mount expended during 1901-2 was $3,122.99, exclusive of dredging, n was completed in accordance with plan and specification. The exten- ong and 20 feet wide on top, with outer faces sloping 1 in 10, and is e end of the wharf, forming an L 18 feet long. It is of an average t, and is constructed of round timber, laid open-faced, with creosoted ure, close-sheathed on all outer faces, and filled in solidly with bal-

fiscal year ended June 30, 1903, the sum of $1,357.87 was applied in iring the outer end of the old work, commencing at the inner end of ed during 1900-1, for a distance of 60 feet inwards a width of 30 feet, ge depth of 3 feet. New face timbers and floor timber break on the sea- tended outwards for a distance of 90 feet (2½ feet high above the cap) ; e of the work was newly sheathed for a distance of 70 feet, the road idened and improved, and the stone wall under the inner end of the ed.

nount expended on this work, including dredging, is $21,711.55.

DESCOUSSE.

Richmond county, is a thickly settled district on the north-eastern e island, and on the southern side of the eastern entrance into Lennox t separating Madame from Cape Breton island, and connecting St. the strait of Canso.

r is formed by outlying islands and connecting beaches, and the en- the eastward, through a narrow channel, obstructed by a 'bar' with ater. It is about ¾ of a mile in length and ½ of a mile in width, and bout 21 feet at low water springs, which rise 6 feet.

$3,000 was appropriated for expenditure in 1901-2, in the construction at Poirierville (Lower Descousse), but as the estimated cost of that to be too large to entertain, it was decided to build a wharf at Des-

t voted for Poirierville in 1901-2 was revoted for expenditure during March 23, 1903, a contract was entered into for the construction of the he sum of $4,388; but owing to the delay in the delivery of the creo- ing, the work of construction had not been started at the close of the

under contract is a pile wharf, with creosoted timber bearing piles, of the low water mark, extending out to 12 feet at low water, 307 feet 2 feet wide, with an L on the western side of the outer end, 22 by 22

creosoted timber was delivered early in July, and the work of construc- enced on July 27.

DIGBY.

shire town of the county of Digby, with a population of about 1,500, tuated on the south-western end of Annapolis basin. It is an important ominion Atlantic Railway, 67 miles north of Yarmouth, 150 miles from es from Annapolis, and it is also a port of call for the daily steamer n Atlantic Railway plying between Digby and St. John. The harbour easons, and well protected from nearly all quarters; storms, however, and north-east, drive a heavy sea against the pier, and if at such times rift ice in the basin, the structure is likely to suffer damage.

The first pier was built by the government of Nova Scotia some years before Confederation, and was nearly destroyed by the gales which swept the Bay of Fundy in 1866-7. In 1869 to aid in rebuilding the work, the sum of $2,920.00 was granted by parliament and transferred to be expended by the provincial government. The pier, as then built, was of pile-bents 12 feet apart for 550 feet next a block of cribwork, 80 feet long and 45 feet wide, the southern half of which sloped so as to form an incline, rendered necessary by the great rise and fall of the tide (24 feet at springs). This incline was finished by a block 170 feet long by 22 feet wide, the northern half of this portion of the pier being all pile-bents, 8 feet apart. The outer end of the pier consisted of a block 56 feet long, 45 feet wide and about 40 feet high. The whole of the northern face was close-piled, the total length of the structure being 870 feet.

In 1872 the sum of $1,650 was expended by the department in completing and repairing the pier. In 1874 a number of piles and braces were renewed, the outer block newly fendered, and new joists and planking laid for the total length. During the gale of February 22, 1879, a schooner loaded with produce for the West Indies parted a cable and was swept bodily through the pier, carrying away a length of 130 feet, which was rebuilt at a cost of $2,367.73.

In 1881-2, the sum of $888.57 was expended in renewing a few piles and other timbers that had been eaten away by the limnoria.

In December, 1885, the outer end of the pier was destroyed by a severe gale, and in 1885-6, the sum of $1,945.62 was expended in repairs.

In 1886-7, a further sum of $767.62 was spent on the same repairs.

In 1887-8, the sum of $7,467.68 was expended on the construction of a block 40 by 40 feet on the site of the displaced outer block; of an inclined landing 26 feet wide and 80 feet long between the new outer block and the undestroyed inner portion of the pier, and the building of a roadway on pile and frame bents, connecting the whole work with the new outer block. In January, 1888, operations were begun towards building the pier to its original length, and the departmental report for the year 1888-9 shows an expenditure of $4,498.14. The new work consisted of a block 45 feet by 45 feet to replace the former one. It is built of round timber with double sets of face-logs, and is fully ballasted; it is 45 feet high, and connected with the older portions of the work by a cribwork inclined landing, over the top of which a deck wharf is carried on heavy framed bents. The inclined landing and its superstructure is 25 feet wide. The inshore or pile-work section was strengthened and repaired in places, and parts of the worn and decayed plank covering were renewed. In 1889-90 heavy piles were driven along both the northern and southern sides of the centre block, which was shifted and damaged by a storm in December, 1885, to prevent any further movement.

In 1890-1 and again in 1891-2, small expenditures were made on general repairs.

In 1890, a contract was entered into for the construction of a landing pier on a new site, viz., on the north side of the 'Racquet,' about a mile to the northward of the present pier and the town of Digby. For this purpose a quantity of timber and iron had been procured by the contractor. Owing, however, to numerous delays, and the death of the contractor, the intention of building this new pier was abandoned, and it was decided instead to repair and reconstruct the present pier, utilizing, as much as possible, the timber and iron belonging to the estate of the deceased contractor. The work of reconstruction was carried out by days' labour at a cost of $15,248.15.

In April, 1894, a length of 330 feet of close-piling along the north side of the pier, together with the caps and walings for the same distance, and about ninety of the main outside bearing and fender piles, were destroyed by a violent gale. In order to save the balance of the structure from the scouring action of the under-tow, set up by the sheet piling, the rest of it was immediately cut out, and the sheet piling and other timber that had been knocked adrift was saved and piled up on the inner wharf. Subsequently in May and June, 1894, the sum of $1,410.03 was expended in making good the damage done by the April storm. The sheet piling having proved a mistake, it was

ER No. 19

about ninety new, heavy piles were driven and thoroughly braced and

e sum of $4,341.99 was applied in filling with substantial, close-piled pace or recess on the north side of the pier near its outer end, 210 average width of 17 feet, and in raising from 2 to 3 feet and renew- oor of the outer 225 feet in length.

e sum of $3,132.89 was applied to the reconstruction of the southern e end of the pier for a length of 450 feet, in substantial pile-work. was covered with 6-inch plank, and securely capped, fendered and year 1898-9 the sum of $579.80 was expended in the renewal and re- r south corner of the pier, which was damaged by being struck by tlantic steamship 'Prince Rupert' during a south-east blow in April, n to this, 40 feet in length of the inclined slope was replanked with d a couple of new fender piles were bolted into position.

he sum of $2,000 was expended in necessary renewals. The work the replanking of the wide part of the inclined slip 125 feet long the narrow part 87 feet long by 17 feet wide, and a portion of the n wharf 18 by 22 feet, with 6-inch spruce deals.

to this, an open shed, 100 feet long by 33 feet 6 inches wide, was outer end of the present shed and office, and over the inclined slip t when landed from steamers.

nce of this pier may be judged by the fact that the collections for ow amount to nearly $3,000 per annum.

e sum of $3,300 was expended in repairs and improvements. The old moved 100 feet up the pier and raised 4 feet in height. Adjoining re was built a new shed 202 feet long, the upper 100 feet in length the floor on a level with a boxcar, and the lower 102 feet built level the pier. A portion of the pier floor was also renewed.

ement is now most satisfactory and convenient for the handling of

he sum of $3,697.77 was expended in rebuilding the lower 60 feet in clined slip. Owing to this portion of the work, which was of crib- much injured by the limnoria, the new portion was built of pile- eing driven through the ballast cribs. It was difficult and expensive on to this, a considerable portion of 6-inch plank on the shoreward was renewed, and a number of the long hardwood fenders that had the daily steamer from St. John were renewed.

xpenditure to June 30, 1903, is $79,273.19, including a refund of provincial government in 1887-8, and not including an expenditure dredging.

rise 24 feet; neaps about 20 feet.

was transferred to the control of the Department of Marine and ne 12, 1888.

DRUM HEAD.

, Guysboro county, is on the south or Atlantic coast of Nova Scotia, outh-east of the entrance to Isaac's harbour. A shoal extending in ion from the 'Head' affords partial shelter to a small boat harbour. was entered into on November 13, 1902, for the construction of a tend from Drum Head, in from 1½ to 2 feet at low water, to the shoal, $4,865.

nder contract is of cribwork 350 feet in length and 16 feet in width ballasted, close fendered on the seaward side, and protected on the

seaward side and at the outer end by a talus of stone sloping 3 to 1 from high water. Spring tides rise 5 feet.

At the close of the year ended June 30, 1903, 151 feet of cribwork was in place, of which the inner 80 feet was nearly up to required height, and the outer 71 feet to an average height of 4½ feet above low water.

The expenditure for the fiscal year was $638.76.

EAGLE HEAD.

Eagle Head, Queen's county, is a fishing and farming settlement of about 200 people, situate on the eastern side of Eagle bay, on the Atlantic coast, about 6 miles north-east of Liverpool. About 20 years ago the provincial government built a stone breakwater here, 195 feet long, and from 20 to 25 feet wide on top. Between the years 1878 and 1882, the department extended the work a length of 125 feet, at a cost of $2,000. It was then 320 feet long, from 20 to 27 feet wide on top, and 16 feet high at the outer end. The seaward and inner faces sloped 1½ to 1 and ½ to 1 respectively. The top of the work was 4 feet above high water ordinary spring tides. This breakwater is a great boon to the fishermen of this locality, affording protection to a fishing fleet, comprising about 30 small boats, flats and whalers. They take on an average about 40 quintals of fish annually.

In the year 1900-1, the sum of $3,387.19 was expended in repairing and extending the breakwater. The work done in that year consisted in replacing the top 4 feet of the old work for its entire length and extending the new work a distance of 90 feet and riprapping the outside of the entire structure. The new work built was 90 feet in length, 32 feet in width on top, 56 feet at the bottom, and of an average height of 16 feet. The same style of work as that carried out in the old structure was adopted, with the exception that better materials were used and better workmanship secured. The top was most carefully laid, and the whole work may be classed as rough rubble masonry. In the year 1901-2, the sum of $1,068.94 was expended in further extending this work; the extension built being 35 feet in length, 30 feet in width on top and 50 feet in width at the bottom, with a height of 17 feet at the outer end. In 1902-3 a sum of $148.03 was applied in repairing the corner where the seaward face meets the outer end, and riprapping about 50 feet in length along the outer end of the breakwater with large stone, to prevent it from being damaged by heavy seas.

EAST BAY (NORTH SIDE.)

East Bay (north side), Cape Breton county, is on the north side of East bay, an arm of the Great Bras d'Or lake, 5½ miles from its head.

The wharf built at this place in 1889-90 extends 220 feet to 10 feet at low lake level, and consists of an approach of brush and stone 50 feet in length and 20 feet in width, four central blocks each 20 by 20 feet, and an outer block 20 feet, in line of work by 40 feet.

During the fiscal year 1902-3 the sum of $600 was expended in repairing the approach and in renewing the floor-stringers, covering, guard-rails and fenders of the block and span work, and the face timbers and ties above high water in all the blocks except the outer end block.

The total expenditure to June 30, 1903, is $2,949.87.

EAST BERLIN.

East Berlin, Queen's county, is a small fishing and farming settlement about 11 miles north-east of Liverpool, with a population of about 300.

In 1902-3 the sum of $1,999.94 was laid out towards building a breakwater 330 feet long, 10 feet wide on top, and 9 feet high on an average, at a point near the centre

ach 700 feet long, protecting the harbour at East Berlin, which is bare The work performed consists of continuous, round-log, stone-filled crib- ered and ballasted and bolted. There is sufficient timber and iron on te the breakwater at a probable further expense of $700.

FINLAY POINT.

nt, Inverness county, is on the west coast of Cape Breton island, 3 miles trance to Mabou harbour.

ount appropriated for expenditure in 1902-3 towards the construction his place, the sum of $529.78 was expended in May and June, 1903, in he timbers, except stringers, cap-timbers and covering, and nearly all ed in the construction of the proposed wharf. The work proposed is to 15 feet in width, extending 148 feet from high water to 3 feet at low approach of brush and stone 150 feet in length.

s rise 4 feet.

FORT LAWRENCE.

nce, Cumberland county, is a place on Cumberland Basin, at the head 'undy, near the mouth of La Planche river, 2 miles to the westward of herst, and immediately west of the Chignecto Ship Railway Company's

1903, a contract (No. 4629) was let to Messrs. J. J. Lyons and J. White, he construction of a wharf at this place, for the sum of $14,895.

harf is to be built at a point on the north-east side of River La Planche nouth, on Cumberland Basin, and about 800 feet to the south-eastward avated at the Bay of Fundy terminus of the Chignecto Ship Railway ill consist of a section of pile trestle work 300 feet long, 50 feet wide h along the outer face, to be built parallel to the bank of the river, n approach, also of pilework, having an average length of 210 feet, a , and an average height of 26 feet. Depth available along outer face , 37 feet at high water ordinary spring tides.

object of building this wharf is to afford convenient transportation ter to the thriving town of Amherst. This town is built on the east Planche, 2 miles up from Cumberland Basin. Owing to the small vol- ter carried by this river and its very tortuous course, it affords no direct unication with the sea. The factories and industrial establishments therefore compelled to have timber and other bulky raw materials r to Sackville, N.B., to be sent thence to Amherst by rail, thus incur- nses for freight charges.

s rise here 45 feet, and neaps 33 feet. On June 30, 1903, no work had e contractors, who were busy trying to procure the timber required.

FRENCH RIVER.

r, Victoria county, is on that part of the east or Atlantic coast of Cape nown as the 'north shore,' about midway between the harbours of St. h Ingonish.

breakwater, 50 feet in length, 27 feet wide, in from 6 to 7 feet at low tructed during 1890-1-2. It was built of native squared timber, and t the sides and outer end.

er its completion, the work was damaged and ballast went out of the and the work began to settle. During 1892-3-4 the work was re-bal- ush and stone bed was placed around it to prevent scour, but during

1896 it was completely carried away by ice. During the last fiscal year the sum of $391.82 was expended in constructing a work for the protection from the sea of the fish houses and the road in front of them, at the foot of the bank at the fishing station. The work is 140 feet in length, 8 feet wide on the top, 10 feet at the bottom, and of a uniform height of 5 feet. The inner face is plumb, the seaward face has a batter of 1 in 4, and the work is constructed with round timber cribwork on a brush bottom, with the seaward face close-sheathed.

Expenditure to date:

On isolated breakwater	$3,504 93
On protection work	391 82
Total expenditure	$3,896 75

FRIAR'S HEAD.

Friar's Head, Inverness county, is on the west coast of Cape Breton island, 6 miles to the northward of the entrance to Margaree harbour.

In 1900-01 the sum of $494.50 was expended in procuring part of the materials required in the construction of a breakwater designed to close an opening in a ledge of rock lying parallel to the shore, at a fishing station near Friar's Head, and affording partial shelter to a small wharf and to the anchorage for boats. The work proposed included a concrete wall 90 feet in length, 4 feet in width on top, and 8 feet in height from 1 foot above low water, with a talus of large stone on the seaward side, sloping 2 to 1 from the top of the wall. In 1901-2 the sum of $1,097.81 was expended in constructing about three-fifths of the concrete wall and one-half the talus, and in procuring part of the cement required to complete the work.

During the year 1902-3 the sum of $629.96 was expended in completing the work proposed with the exception of 3 cubic yards of concrete in the west end of the wall and the talus. The stone obtainable for the talus was too light to withstand the sea. Those placed in 1901-2 were carried away.

The total expenditure to June 30, 1903, is $2,222.27.

GRAND ETANG.

Grand Etang, Inverness county, is situated on the Gulf of St. Lawrence, about midway between the harbours of Margaree and Cheticamp.

The opening of a channel through a beach which separated the waters of the gulf from a large and deep fresh-water pond, and the construction of a channel protection work to make the pond available for use and shelter of fishing boats and small vessels, necessitated the diversion of the highway across the beach, and the construction in 1895-6 of a bridge across the pond, 500 feet above the former crossing.

The bridge is 563 feet in length, including the east and west approaches of brush and stone, with cribwork abutments, respectively 94 and 51 feet in length, and 438 feet of pile work. It is provided with a hand rail on each side, an opening for boats and a draw. The depth at extreme low water over the central 200 feet is about 6 feet, and to firm bottom, through water and soft mud or silt from 21 to 24 feet. The piles having been weakened by the ravages of the teredo, temporary repairs were made in 1898-9 and 1899-1900. In 1901-2 the sum of $2,799.35 was expended in temporary repairs and in procuring all the creosoted piling and part of the native timber required for its reconstruction.

During the fiscal year 1902-3, the sum of $1,020 was laid out in temporary repairs to the old bridge; in procuring the balance of the native timber required, and in constructing a new bridge parallel to and distant 9 feet from the south or inner side of the old bridge.

ER No. 19

xpenditure in connection with works at Grand Etang to June 30, 1903,

nnel and protection works.	$23,870 64
lge construction 1895-6.	3,690 20
airs to bridge and on construction of new bridge. .	4,105 30
	$31,666 14

GRAND NARROWS.

ows, Cape Breton county, is on the south-eastern side of Barra Strait. the Great with the Little Bras d'Or lake. It is an important station on l Railway, at the southern end of the railway bridge which spans the ce; it is also a landing place for steamers, which call twice a day with ngers for and from Baddeck, and make connection with the express t and west.

arf at this place was 287 feet in length, including 67 feet of cribwork and stone and covered with gravel; 80 feet of pilework built in 1885-86 nt over the remains of an old landing pier built by the provincial gov- extension, 140 feet in length built by the department in 1883-84. The ted of three blocks, each 20 by 20 feet, and an outer block or head, 20 work and 60 feet in length, with openings between them of about 16

e made upon the structure from time to time, but it eventually fell into d dangerous condition, owing to natural decay and the ravages of the as decided to reconstruct it with creosoted timber piling.

year 1901-2, the sum of $1,711.50 was expended in procuring the great- the materials required in the reconstruction of the wharf, including ing.

last fiscal year the sum of $1,300.66 was expended in constructing pile- 230 feet from the outer end of the 67 feet cribwork approach, or 10 feet r end of the original outer block at its north side. The new work is over 210 feet of its length, and 30 feet in width over the outer 20 feet. f water at the outer end of the wharf is 11 feet at low lake level and high lake level.

xpenditure on this work, up to June 30, 1903, including refund of the provincial government, is $8,698.36.

GRAND RIVER.

, Richmond county, is a small tidal stream rising in Loch Lomond nto the Atlantic ocean 6 miles to the eastward of the entrance to St. entrance is obstructed by a bar of sand, over which there is a depth t extreme low water, and is rendered dangerous by several large rocks. nel carries 6 feet at extreme low water to within half a mile of a the river 3 miles inland.

were issued to the resident engineer at Antigonish with regard to the sum of $2,000 had been appropriated for expenditure during 1902- new channel, and that the survey was to be made and a report sub-

as received under date January 31, 1903, on the opening of a new er of a mile to the westward of the present entrance, in which the proposed,—an 8 feet low water channel through the beach with on each side, and half a mile of inside dredging,—was estimated at d of opening a new channel, which on account of its cost and its

doubtful utility and permanence could not be recommended, the improvement of the present channel by the removal of large rocks obstructing the entrance was suggested.

GRANVILLE CENTRE.

Granville, Annapolis county, is a scattered settlement of some 300 people, situated on the right or north bank of the Annapolis river, 4 miles east of, or above, Granville ferry. Both banks of the Annapolis river, from the town of Annapolis to the head of navigation at Bridgetown, a distance of about 15 miles, are thickly settled by a thrifty, agricultural and fruit growing population.

In 1901-2, the sum of $851.02 was expended in constructing a pile wharf, 90 feet long, 25 feet wide, with an L 25 feet long, giving a face length of 50 feet along the face of the wharf. The wharf is 18 feet high, carrying at high water a depth of 16 feet.

In 1902-3, the sum of $857 was expended in completing the wharf, in constructing a road approach 900 feet long, and in building a freight shed 26 x 14 feet on the outer end of the wharf.

Spring tides rise about 27 feet.

GREEN COVE.

Green Cove, Victoria county, is a small fishing station on the eastern or Atlantic coast of Cape Breton island, nearly midway between North bay, Ingonish, and Neil's harbour, being about 5 miles north from the former, and 4 miles south from the latter.

The cove is a small indentation in the general coast line, about 400 feet in depth and 900 feet in width, and is protected on the southern end by a reef and from the eastward by outlying ledges.

In 1889-90, the sum of $200 was expended by the department in improving the landing place for boats at the northern end of the cove, by the removal of bedded rock and boulders.

At its session of 1902 parliament appropriated the sum of $500 for expenditure during the fiscal year 1902-03 in the construction of a breakwater, but as it was found that the amount was too small for the work required, plans and specifications were prepared for a breakwater extending from the shore to the innermost of the outlying ledges, and a contract was entered into on February 4, 1903, for its construction, for the sum of $6,475, but up to the end of the fiscal year the work had not been started.

The work under contract is 450 feet in length, and 16 feet wide at a height of 2 feet above high water, with top rounded off and sides sloping 2 to 1, the inner 180 feet consisting of a stone embankment, and the outer 270 feet of a stone embankment with cribwork core.

The amount expended in calling for tenders, &c., was $91.18.

GROS NEZ.

Gros Nez, Richmond county, is a small fishing station at the eastern extremity of Petit de Grat island.

A breakwater, undertaken in 1885-6, with the object of restoring a beach forming a natural landing place to its original condition, and protecting the anchorage for boats, was completed the following year. It is 150 feet in length, including 124½ feet of cribwork 14 feet in width on top and 8 feet in average height, and a stone embankment at each end.

During the fiscal year 1902-3, the sum of $384.51 was expended in renewing the floor stringers, covering and cap timbers of the breakwater, and in placing 15 new fenders on its seaward side and 1 on its inner side.

PER No. 19

expenditure to June 30, 1903, including a refund of $106.95 expended
ial government, is $2,241.46.

HAMPTON.

Annapolis county, formerly Chute's Cove, is situated on the south-
e Bay of Fundy, 27 miles north-east of Digby Gut and 6 miles north-
town, an important station on the Dominion Atlantic Railway. It has
f about 200 people, engaged in fishing, farming, and the export of cord-
ber.

nd 1856, a small pier 165 feet long was built near the western side of
provincial government contributing $600 to its cost. The site was
missioners, apparently without professional advice, and was objection-
accounts. In 1879, at a cost of $3,000, an addition of 121 feet was made
nent, and the older portion of the work strengthened with the hope of
ie of the defects of location.

on further examination, it was found that the original work had been
ned by the sea, and that owing to the direction of the pier the shingle
ing the water on the inside. It was therefore decided to rebuild the
nother site about half a mile to the eastward, which was carried out
2,300. The new pier, as then completed, was 246 feet long, more sub-
t, and much better located than the old one, it being situated imme-
westward of a small brook which serves to keep the schooner berth
from sand. In 1888-9, it having been found that the stream had
the foundation, endangering the whole structure, the department ex-
m of $750 in close-piling the inner face, levelling up the top of the
ad settled in places, putting in some additional ballast ,and effecting
s to the covering and break.

ry, 1889, during a heavy freshet, the brook again gave some trouble,
ts banks and the gravel beach, and threatening to undermine the break-
0-91, the department spent $21 in repairing the damage and in turning
its original channel. In 1892-3, the breakwater being found not quite
o afford convenient berth for schooners, the department applied the
in constructing a block 40 feet long, 27 feet wide on top and 27 feet
ıter end, and in repairing about 100 feet of the inner end of the old
ıg the inner face, putting in new floor stringers and covering them
king, thus putting the work in a thorough state of repair.

ar 1898-99 the sum of $1,999.79 was expended in thorough repair of
. The whole top of the work for the outer 185 feet in length, 20 to
th, was raised with new work for a height of from 2 to 4 feet, ren-
y by the great and unequal settlement of the work caused by the scour-
the little stream that discharges alongside and had made its way be-
prevent a repetition of this action, the inside face of the breakwater
for a length of 80 feet with a puddle wall faced on the outer side with
The breakwater has a total length of 270 feet, a width of from 20 to
height, at the outer end, of 24 feet, where at H. W. O. S. T. there is
feet of water.

the sum of $207.63 was expended in sheathing with close piling about 53
re end of the east side of the breakwater, to prevent the little stream that
ast of the breakwater from undermining the work.

expenditure to June 30, 1903, including a refund to the provincial
$1,538.10, is $11,316.52.

was transferred to the control of the Department of Marine and
une 12, 1888.

les rise 32 feet; neaps, 18 feet.

HAWK INLET.

Hawk Inlet, Shelburne county, is an inlet on the extreme southern end of Cape Sable Island, about 2 miles south-east of Clarke's harbour, and is the centre of a very important fishing station on that island. It has never been navigable for even small boats at all stages of the tide, so that when it was storm, fishermen had to either refrain from going out, or else being out were unable to get home till after the tide had risen sufficiently to allow them to float their boats across a series of sand flats about 1,000 feet long, which intervened between their exposed boat anchorage outside and a safe harbour in the inlet. With a sum of $484.29 expended in 1901-2 and the further expenditure of $215.71 incurred in 1902-3, forming a total outlay of $700, a boat channel about 240 yards long and 20 feet wide was opened, leading to the safe harbour in the inlet. The work through sandy shoals was carried on, as a rule, with plough and harrow, and, when possible, with shovels. About 55 tons of rocks were also removed, some of which had to be blasted. Where first dug, the channel has washed out to a depth of 3 feet at low water; in other places the depth secured is not great, but there is sufficient water everywhere to allow small boats to float at the lowest tides There are still some rocks that should be removed to make the work undertaken complete, viz., so as to permit of the passage of the larger class of boats at all times.

HERRING COVE.

Herring Cove, Halifax county, is a small land-locked basin or inlet, situated on the west side of the mouth of Halifax harbour, 5½ miles in a direct line nearly south from the city. On both sides of the cove is a fishing village of about 450 persons, wholly dependent upon fishing. The annual value of the catch is $100,000. In 1874 the department spent the sum of $2,400 in dredging a bar of sand and silt that had formed at the entrance to the cove, a little over 12,000 cubic yards of material being removed. In 1894-5, the bar having re-formed, the department dredge 'George McKenzie' dredged 12,915 cubic yards, besides numerous large boulders. On February 16, 1903, a contract (No. 4559) was entered into with Messrs. Reid & Archibald, of Halifax, for the construction of a breakwater on the east side of the mouth of the cove. The work, when completed, will be 150 feet long, 35 feet wide on top, and 20 feet high at the outer end, where, at high water ordinary spring tides, there will be about 16 feet of water. Spring tides rise 6 feet, neaps 5 feet.

The breakwater will be substantially built of round-log cribwork, the lower portion, up to half-tide, being of creosoted timber, to resist the ravages of the limnoria. Up to June 30, 1903, creosoted and other timber had been delivered on the site of the work and the expenditure was $3,855.05.

HUNT'S POINT.

Hunt's Point, Queen's county, is a small fishing settlement, 2 miles north-west of White Point, and 7 miles from Liverpool town, with a population of about 200. The only harbour at this place is a small cove, primarily protected by a beach, which in turn was protected by a block of cribwork about 35 feet long by 30 feet wide, built by the provincial government before Confederation. This block being found inadequate for protection purposes, the department, in the fiscal year 1899-1900, constructed a small breakwater supplemented by beach protection work. The breakwater is 120 fee long, 12 feet wide on top and 12 feet high at the outer end. The beach protection is 130 feet long, from 4 to 5 feet high and 6 feet wide on top. The breakwater is constructed of round-log, stone-filled cribwork, the outside being sheathed with timber spars, hewn to a thickness of 5½ inches. The beach protection consists of open-face stone-filled cribwork. In 1902-3, a sum of $449.41 has been applied in replacing the

PER No. 19

lock by a new cribwork 35 feet long, 20 feet wide, and of an average et, and building a break 2½ feet high the entire length of the breakwater. n of $105.43 was expended in making repairs to another block of crib-

INDIAN BROOK FLATS.

ook Flats, Shelburne county, consists of a line of flats running off-shore n Passage, which are distant from the village of that name ½ mile to the e settlement in their immediate vicinity is called North-east Point. The harf in course of construction here will not only accommodate this settle- t 300 or 400 people living from 1 to 2½ miles therefrom. The occupation eople is fishing, and they have hitherto had no facilities whatever for eir vocation. In order to afford these people increased facilities for such ment at its session of 1902, made an appropriation of $2,700 for this wharf. found suitable for the construction of the proposed public wharf was that ed by a small wharf belonging to a resident of that neighbourhood. This with the right of way to the public road, was purchased by the depart- sum of $150. When completed this wharf will consist of four distinct k bank approach 41 feet long; a piece of block and span work 56 feet estle-bent stem 374 feet long and a pile trestle-bent head 40 feet in length, l length of 511 feet which carries the wharf from the shore line to the ring the outside edge of the flats. The approach is of the usual rock- feet wide on top and has a height at the outer end of about 9 feet. The work consists of 2 blocks of round-log stone filled cribwork, each 20 feet ated by a clear span of 16 feet in length; it has a width on top of 18 feet at the outer end of about 10 feet. The stem consists of 34 pile-trestle l feet centre to centre of piles, all of 16 feet in width, and having a height he outer end. The head of this wharf is 40 feet long and 50 feet wide on pile trestle-bents, well fendered and braced; it has a height of about 23 er end standing on the extreme edge of the channel. In 1902-3 the piles n, the approach and cribwork all completed and the caps and about one- ers and the trestle-bents put in place and fastened; the total expenditure these works being $2,648.81. It is estimated that the wharf can be com- -4 with a further outlay of $500. The site of this work is in a protected ut little ice or tide is likely to injure it; hence it was built of a lighter er works of a similar nature.

INGONISH (NORTH).

(north), Victoria county, is on the eastern coast of the northern part of Island, about midway between Sidney Harbour and Cape North. It is the south bay of Ingonish by a narrow, rocky and precipitous peninsula, in length.

ber 6, 1899, a contract was entered into for the construction of a break ibald's Point on the north side of the bay, for the purpose of forming a uge for fishing boats, and the work was completed on December 20, 1900. water is 484 feet long, with an L 77½ feet long, and from 18 feet at 4 feet wide at the outer end, and is constructed of squared timber, laid creosote timber substructure, fully ballasted and fendered, sheathed on ce and end, and protected on the seaward side by a stone talus.

901-2, the sum of $951.36 was expended in raising the stone talus for a 0 feet from the inner end, up to the top of the work.

e last fiscal year, the raising of the stone talus commenced in the previous pleted, at a cost of $1,515.52.

The depth of water along the face of the L at lower water springs, is 11 feet. Spring tides rise 4 feet.

The work has proved of great benefit to the fishermen of that district.

The total expenditure to date is $30,279.51.

INGONISH (SOUTH).

Ingonish bay, Victoria county, is situated on the eastern coast of Cape Breton island, about midway between Sydney harbour and Cape North. It is divided into north and south bays by Middle Head, a narrow, rocky neck of land over 2 miles in length.

At the head of South bay there is an extensive lake, separated from the sea by a beach, through which there formerly existed but a shallow channel.

In 1873, works were undertaken by the department for the improvement of the channel. On their completion in 1876 there was a channel 200 feet in width, with a depth of nowhere less than 14 feet at low water, and with its northern sides protected by a pier 500 feet in length, thus giving access for vessels to the lake, which has an area of about 400 acres and great depth, and affords a safe and commodious harbour.

The pier, on which small sums were expended every year from 1876 to 1880, and large amounts in 1881 and 1882, sustained serious damage during heavy easterly gales in 1882, and was subsequently carried away down to below low water level.

In 1886-87, an anchor and a mooring buoy were placed in the harbour near the entrance, and a beach protection work, 58 feet in length and 20 feet in width, was constructed on the northern side of the entrance, to prevent the sea from cutting away the end of the beach, and opening up a channel between it and the remains of the old breakwater; and during 1894-5 a breach at the back of the protection work was closed with a cribwork block, 45 feet in length and 15 feet in width, and brush and stone placed at its sides.

In 1893-94, a public wharf was constructed on the northern side of and near the entrance to the harbour, consisting of a block of cribwork 31½ feet wide on top and 30½ feet in length, with an approach of brush and stone, 45 feet in length and 20 feet wide. The depth of water at the outer end, at extreme low water, is 8½ feet.

During a severe easterly gale, accompanied by an extraordinary high tide, on February 4, 1895, the beach separating the harbour from the bay was swept from end to end. Nearly all the buildings and private wharfs were destroyed and carried away, but the public works were not disturbed, with the exception of some settlement in the slope on the seaward side of the beach protection work.

Since the destruction of the breakwater in 1882, the channel has been gradually contracting and getting shoaler, but it is still some 70 feet in width, and has a depth of 12 feet at low water. Spring tides rise 4 feet.

On February 28, 1903, a contract was entered into for the construction of a wharf on the southern side of the harbour and near the entrance, in the sum of $2,485, but work of construction was not commenced up to the end of the fiscal year.

The work under contract is 160 feet in length, extending to 16 feet depth at low water, and consists of a shore abutment and 4 cribwork blocks, with intervening spans. The abutment and the 3 inner blocks are to be 16 feet wide, and the outer block which forms the head 30 by 30 feet, constructed of round timber, with creosoted timber substructure, and close sheathed around the end faces.

The total expenditure to date for works at this place, not including expenses incurred in connection with the work under contract, is $93,693.31.

IRISH COVE.

Irish Cove, Cape Breton county, is on the south-east shore of the Great Bras d'Or lake, near the entrance to East bay. The distance to the head of East bay is

ER No. 19

Peter's canal about 22 miles, and, across the lake, to Grand Narrows,

at this place, completed in 1892-3, is 160 feet 8 inches in length and
, including a shore block 47 feet in length, a central block 20 feet
th, and an outer block 57 feet in length with an L 20 by 20 feet.
constructed, fully ballasted, and had the exposed face of the outer
by close-piling. In 1898-99 and 1900-01 part of the close-piling of
(the whole of which had been either damaged or destroyed by the
ewed.
fiscal year 1902-3 the sum of $499.96 was expended in renewing 165
iling and 60 lineal feet of guard rail, in replacing about 20 tons of
epairing the covering.
xpenditure to June 30, 1903, is $4,058.52.

ISAAC'S HARBOUR.

our, Guysboro' county, is a small but safe harbour on the southern or
f Nova Scotia, 36 miles to the westward of Cape Canso, and 16 miles
of the entrance to St. Mary's river.
wharf on the west side of the harbour, completed in August, 1901
to 12 feet depth at low water. It consists of a stone abutment 135
nd a block and span extension 160 feet in length, including 3 blocks
et, and an outer block 22 feet in line of work by 48 feet.
fiscal year 1902-3 the sum of $723.19 was expended in constructing a
37 by 17 feet on the south side of and at the inner end of the wharf.
xpenditure to June 30, 1903, is $4,809.11.

ISLAND POINT.

t, Victoria county, is on the south side of Boularderie island, 18 miles
idge crossing the little Bras d'Or at the head of St. Andrew's channel
Bras d'Or lake.
0 feet in length and 20 feet in width, with an L at the outer end,
tending to 11 feet at ordinary lake level, and consisting of blocks and
ructed by the department during 1886-7.
2-3, the sum of $499.48 was expended on repairs to the wharf, which
ed by ice.
of the toredo below and the natural decay of the wood above the water
work to settle and become dangerous, and the sum of $550 was appro-
nditure in repairs during 1902-3.
ork was visited to start the repairs, it was found that the inner blocks
constructed, and that the top of the outer block had been carried away
below low water, and as the amount voted was entirely too small to
whole work, out of the appropriation the sum of $513.37 was expended
g the inner end, and in procuring a portion of the native timber
nstruct the outer block.
xpenditure on this work up to June 30, 1903, is $2,973.54.

JANVRIN'S ISLAND.

land, Richmond county, is a large island to the westward of Madame
parated from it by Mousselier's passage. It is about 5 miles in length
width, and is surrounded on the southern and western sides by shoals
some cases half a mile from the shore. It has but one little harbour

called Janvrin's harbour, on the southern side, with about 9 feet at low water, but the entrance thereto is so long and intricate that it is not of much benefit.

The sum of $2,000 was voted for expenditure during 1902-3 on the wharf on Janvrin's island without any previous examination. The island was visited twice for the purpose of locating the site and to obtain necessary information, but as the residents have not as yet decided on what part of the island they desire to have the wharf located the survey has not as yet been made, and no expenditure was incurred.

JUDIQUE.

Judique, Inverness county, is on the east side of St. George's bay, 10 miles south of Port Hood, and 16 miles north from the entrance to the Strait of Canso.

During 1898-99, 1900 a breakwater 725 feet in length and 20 feet in width, with an L 20 by 20 feet, at the outer end, and extending into 6 feet at low water, was built by the department at McKay's Point, for the protection of fishing boats.

The work is constructed of round timber, laid open-faced with creosoted timber substructure, is fully ballasted, close sheathed around the outer end and the L, and protected on the seaward side by a talus of stone.

During the severe north-westerly gale on September 12, 1900, which caused so much damage along the coast of the Gulf of St. Lawrence, this work was fully exposed to its fury, and was slightly damaged.

During the last year the sum of $898.77 was expended on repairs and improvements, as follows : the floor stringers and the covering, for a distance of 137 feet, where they had been disturbed, were replaced; the face chambers, for a distance of 550 feet were re-ballasted, where ballast had been washed out, this portion of the work was close-fendered, and some 407 lineal feet of the cap timber along the seaward face was renewed.

The expenditure on this work up to June 30, 1903, is $20,805.88.

KEMPT HEAD.

Kempt Head, Victoria county, is on the northern side of Boularderie Island, on the Great Bras d'Or Channel, and about one mile from Boularderie Head, the south-western end of the island.

During 1901-2, a wharf 185 feet in length and 20 feet wide, with an L on the outer end, 20 by 20 feet, extending out into 12 feet at low lake level, was constructed by the department.

It is a block and span structure, and consists of an approach of stone, clay and gravel, 10 feet long; of a cribwork abutment, 55 feet in length; of two cribwork blocks, each 20 by 20 feet, and of an outer block 20 by 40 feet, with 20 feet openings between the blocks, spanned and covered over. The abutment and the blocks are constructed of round timber, laid open-face, creosoted up to high water, well protected with fenders, and the outer faces of the two outer blocks, with close-sheathing.

During the last fiscal year the sum of $719.56 was expended in the construction and fencing of a road, 900 feet in length and 20 feet wide, to connect the wharf with the public road.

The total expenditure to June 30, 1903, is $5,242.56.

KINGSPORT.

Kingsport, King's county, formerly known as Oak Point, is a village of some 500 people, on the south-west side of the basin of Minas, between the mouth of the Cornwallis river and Cape Blomidon. It is the terminus of the Cornwallis Valley Railway (opened December, 1890, and now a branch of the Dominion Atlantic Railway), running to Kentville, the county town, 14 miles to the south. A pier, 445 feet in length,

ER No. 19

ready stood here when the harbour was taken in charge by the Depart- Works. In 1873-4 the department built cribwork 12 feet wide on the ed side of the wharf for the purpose of breaking the force of the sea. k was extended a length of 240 feet, by a width of 30 feet in order to ltered area and afford earlier access to the roadstead in lee of the pier, the great range of tide, was dry between half ebb and half flood. In s repairs were several times made. In December, 1890, the Cornwallis ened for public traffic and about the same time the wharf, which forms the railway, and on which is a track, passed by agreement with the ler the control and ownership of the railway company.

fiscal year 1901-02, the sum of $9,276.72 was expended in rebuilding of the outer block of solid cribwork, 270 feet long, which was built in ng or re-enforcing block 10 feet wide was also built on the north side for n of this outer portion.

e sum of $4,934.60 was expended in continuing the repairs and renewals un last year. The outer 130 feet in length of the pier was taken down feet and rebuilt in substantial cribwork. On the north side of the pier gth of 700 feet a re-enforcing block, 10 feet wide was built. This latter finished height, still lacking from 3 to 6 feet.

s rise 48 feet, neaps 40 feet.

diture by the department up to June 30, 1903, including a refund to the nment of $1,738.14 in 1887-8, is $41,779.29.

L'ARDOISE.

Richmond county, is situated on the eastern side of St. Peter's bay, e from the Atlantic ocean, and about 9 miles east from the southern Peter's canal.

l breakwater built off Martin's Point, in from 5 to 10 feet at low 7, and almost destroyed in 1883, was reconstructed during 1891-2-3. consists of a timber core, 400 feet long and 20 feet wide, placed over the original structure, in from 1 to 4½ feet at low water, its top stand- e high water, the whole being covered with stone, sloping 3 to 1 on de and outer end, and 2 to 1 on the inner side and inner end. The f the work, above low water mark, was covered with stone of not less feet each, and the spaces between the stones above the line of high d in with concrete.

completion of the work the covering stones on the seaward and outer h had been disturbed by the sea, have been replaced, and a concrete e on top and 4½ feet in height, with top flush with the surface of the en constructed over the outer face and the ends of the cribwork core. ater averages 17½ feet in height, from the original bottom up to the e covering, which is 5 feet above high water, and 10 feet above low

stop the undertow from sweeping into the harbour through the gap, ner end of the breakwater and the shore to the eastward of it, a dis- 1,200 feet, the sum of $3,000 was voted for expenditure during 1901-2. $7,500 for expenditure in 1902-03 towards the construction of works ne.

specification for the proposed work were submitted in January, 1902, nd of June 30, 1903, the proposed work had not been let.

$25.27 is charged to this work on account of printing.

LARRY'S RIVER.

Larry's River, Guysboro county, is at the western extremity of Tor bay, on the southern or Atlantic coast of Nova Scotia, 24 miles to the westward of Canso harbour.

The harbour, a channel through mud flats improved by dredging, was formerly protected from the eastward by a beach and bar of shingle. Since 1896 the point of the beach at the northern extremity of the bar and the bar itself have been lowered and carried inward toward the channel.

In order to restore the shelter formerly afforded by the beach and bar, a contract was entered into on September 22, 1902, for the construction of a breakwater, for the sum of $15,840.

The work under contract consisted of two sections of stone embankment, respectively 125 and 379 feet in length, each 14 feet in width at the level of 2 feet above high water and 6 feet in average height, and a central section of cribwork 500 feet in length, 14 feet in width on top and 11½ feet in average height, protected on the seaward side by close fendering and by a talus of stone sloping 2 to 1 from high water. The embankment and cribwork are to be finished at a height of 4 feet above extreme high water. Spring tides rise 6 feet 6 inches.

During the fiscal year 1902-3 very little work was performed, operations not having been commenced till June 22. The amount expended on the work performed up to June 30, 1903, was $749.81.

LINGAN.

Lingan, or Bridgeport harbour, Cape Breton county, is at the head of Indian bay on the north-east coast of Cape Breton island, about 5 miles to the eastward of the entrance to Sydney harbour. A large pond or basin, having a depth of 8 feet at low or 12 feet at high water, is separated from Indian bay by a beach of sand. The entrance, which forms the harbour, was deepened and straightened by dredging in 1878-80 to improve the facilities for shipping coal from the Lingan mines, since abandoned It is now crossed by a bridge built by the provincial government for the accommodation of traffic over the beach between Lingan and Bridgeport.

A work of brush and stone 1,900 feet in length, constructed in 1876-8, afforded an efficient protection to the beach up to 1893, but has since been carried away in places over distances aggregating 1,400 feet.

In 1901-2 the sum of $1,999.60 was expended in constructing 1,000 feet of brush and stone work, 14 feet in width and 4¾ feet in average height, leaving 1,370 feet, 13 feet in width and 3 feet in average height, to be constructed to complete the work undertaken.

During the fiscal year 1902-3 the sum of $599.89 was expended in constructing 500 feet of brush and stone work.

LIVINGSTONE'S COVE.

Livingstone's Cove, Antigonish county, is on the south-eastern shore of Northumberland strait, about 2 miles south-west from Cape George.

For the purpose of affording shelter to the fishing boats of the district, and a landing place for steamers and small vessels, a breakwater was commenced by the department in 1899, and completed in September, 1902.

During the last fiscal year the sum of $1,519.51 was expended in completing the head block, or outer end, of the breakwater, the materials for which were procured during the previous year. The head block is 48 feet long, 24 feet wide on top, and of an average height of 18 feet, and is constructed with native squared timber, laid with 7-inch openings, fully ballasted and close-sheathed on all outer faces, with hardwood sheathing.

ER No. 19

ze work extends out into 9 feet at low water springs, is 312 feet in proached by a road cut through the clay bank 105 feet in length. The continuous structure, and consists of a shore abutment with stone 30 feet long and 18 feet wide, on top; of a cribwork block 80 feet long , and of a cribwork extension 202 feet in length and 24 feet wide, with hern side of the outer end 24 by 24 feet. The crib-work is con- ative squared timber, laid with 7-inch openings, fully ballasted and eathed with hardwood on the northern or seaward face, the outer end face of the L.

rise 4½ feet.

penditure on this work up to June 30, 1903, is $14,062.22.

LITTLE HARBOUR.

our (Arnold's Point), Shelburne county, is situated on the south-east- Black Point, about 5 miles east of Lockeport. It has a population of , who are chiefly engaged in fishing operations for a livelihood. The o protection for their boats, and lose many valuable craft for want of

n of 1902, parliament made an appropriation of $1,700 for the con- eakwater-wharf, 280 feet long, for the protection of this harbour; but truction of the lumber mills of the place by fire, the work could not 1902-3, as was intended. Expenditure up to June 30, 1903, $138.68. s to be completed in 1903-4, at a probable total cost of $2,500.

LITTLE NARROWS.

ows, Victoria county, is a settlement on the south side of the Little action of the St. Patrick's channel, an arm of the Bras d'Or lake, at a the eastward of the village of Whycocomagh, at the head of the

onstructed at Little Narrows in 1887-8 consisted of a shore block 47½ nd 20 feet in width, and a pile extension 72 feet in length, with an L on the west side. After its completion, a warehouse was built on the the shore block.

he sum of $499.65 was expended in reconstructing the outer end, a n length having been substituted for the outer 20 feet and L, in es in three out of the five bents in the extension, and in repairing the

-2, the sum of $1,494.80 was expended in effecting the following repairs ts, and in reconstructing a small ferry slip :—

nd, or 'head,' was repaired and strengthened by placing 35 fender piles ng piles under each bent, and the warehouse was thoroughly repaired ewal of the flooring and roof covering and the painting of the exterior.

last fiscal year the sum of $499.04 was expended in extending the head h pilework, a distance of 12 feet outwards, in order to enable steamers from the wharf, when vessels are lying at the private wharf alongside ground in shoal water.

penditure to date is $3,993.49.

LOWER COVE.

, Cumberland county, is a small and scattering settlement of about lation, situated on the shores of Cumberland basin, about 2½ miles Mines. The chief industry of this place is the manufacture and

exportation of grindstones, which business is conducted by a company known as the Atlantic Grindstone Company, Limited. The number of employees of the company differs with the seasons, but it never is less than 60 and often about 120. Under a new management this company was desirous of extending their business, and at a proportionate larger expense they enlarged their plant to nearly double its former capacity. They, besides improving their machinery, had expended a large sum in constructing a wharf. This wharf is situate on the shores of a small cove, from which this place takes its name, but even then it was exposed to heavy seas, so that it was difficult to procure vessels to load at the pier.

In order to protect this wharf the department, during the fiscal year 1901-02, began the construction of a breakwater on the other side of the cove, and a further grant was made by parliament at the session of 1902 to complete this work. This breakwater has been completed in 1902-03, the expenditure amounting to $1,301.86. Total cost of work, $3,731.66. There was an old work on the site of present work built by the provincial government, which had been partially destroyed; this work proved to be of less use than was calculated on. The breakwater as now completed is 202 feet in length, has a width, on top, of 20 feet, and a height at the outer end of 29 feet. It is constructed of continuous round log, stone filled cribwork, well fendered and sheathed on the outside face and end with 4½-inch hewn sheathing. The ballast used is of exceptional quality, and well packed by hand. In the fall of 1902, when the work was but partially finished, vessels had no difficulty in lying at their moorings at the pier on the other side of the cove, and the parties interested appear to be well satisfied with the results secured.

LOWER WEST PUBNICO.

Lower West Pubnico, Yarmouth county, is a thrifty and thickly populated district, situated on the west side of Pubnico harbour, from 30 to 35 miles south-east from Yarmouth. The people are engaged in fishing and farming.

In 1902-3 the sum of $1,000 was expended in rebuilding and converting into a public wharf an ancient cribwork wharf, situated at the lower or southern end of the district. The outer 120 feet in length of the old work was substantially rebuilt in pile-work; it is 25 feet wide and from 8 to 14 feet high. At the outer end there is about 11 feet of water at H. W. O. S. T.

Spring tides rise about 12 feet.

MABOU.

Mabou harbour, Inverness county, is on the west coast of Cape Breton island, 6 miles north-east from Port Hood.

The entrance was formerly at the southern extremity of a range of sand hills and by an intricate channel obstructed by a bar, over which there was a depth of only 4 feet at extreme low water.

The opening of a new channel through the sand hills at the northern extremity was undertaken in 1872. A pier 835 feet in length, on the southern side of the new channel, was completed in 1876, and the same year the old channel was closed. Expenditures were made nearly every year from 1876 to 1902 in repairs to the pier, the construction of brush and stone work on the southern side and of protection works on the north side of the channel, and in dredging.

On the completion of repairs undertaken in 1901-2, the work included:—

On the south side (*a*) the remains of a pier 835 feet in length and 20 feet in width, founded in about 12 feet at extreme low water, and sloping from about 10 feet below extreme low water at the face to 2 feet above extreme low water at the back.

ork of brush and stone of various widths extending outward from the the pier about 1,600 feet, the inner end of which is 8 feet above and the feet below extreme low water.

sh and stone work at the back of the pier 800 feet in length, 10 to 12 , on top, and 7 feet in average height.

the north side, 5 pile and brush groins, 4 of which are from 75 to 85 feet d one 45 feet in length.

imum width of the channel opposite the pier is about 130 feet. The depth w water, in the channel opposite the pier, varies from 12 to 15 feet. Over t 600 feet out from the head of the pier, the minimum depth, at extreme 8 feet 3 inches. Spring tides rise 4 feet.

the fiscal year 1902-3, the sum of $1,198.71 was expended in raising and brush and stone work at the back of the pier; in constructing a cross wall stone 159 feet in length, 12 feet in width and 5 feet in average height inner end of the brush and stonework and the shore; and in repairs to the e north side of the channel.

l expenditure to June 30, 1903, is $134,750.07, and $22,535.23 for dredging

MAIN-À-DIEU.

Dieu, Cape Breton county, is a small harbour on the eastern coast of Cape d, 10 miles north from Louisbourg.

vater 230 feet in length was built on the east side of the harbour in 1881-2. f a cribwork core fully ballasted and covered with stone, sloping on the at the outer end 3 to 1, and on the inner side 2 to 1.

the fiscal year 1902-3, a plan and specification were submitted and tenders for the construction of a breakwater on the west side of the harbour top the undertow and thus make the anchorage safer, but up to June 30 ad not been entered into.

k proposed is to extend 320 feet in from 6 inches to 2½ feet at extreme low to be of cribwork, 14 feet in width on top, fully ballasted, close fendered rd side, and protected on the seaward side by a talus of stone sloping 3 to water. Spring tides rise 5 feet.

of calling for tenders was $103.60.

MALIGNANT COVE.

nt Cove, Antigonish county, is situated on the southeastern shore of and strait, about midway between Arisaig and Georgeville, and distant s from each.

of $5,000 was voted for expenditure during 1899-1900 towards opening r boats through the gravel beach, into a small pond at the head of the constructing channel protection works. A plan and specification for works tward to 7 feet at low water springs were prepared, and the sum of s expended in procuring the materials required for the construction of the orks.

k proposed included the construction of piers, placed 60 feet apart, on f the channel, which was to be excavated to a width of 30 feet in the bot- depth of 2 feet below low water. The piers extending 248 feet inwards beach, from low water outside, to be 10 feet wide on the top and founded ; those extending from low water outwards to be 16 feet wide on the top from their inner ends, and 22 feet wide over the outer 30 feet. All crib- be built of round native timber, laid open-faced, fully ballasted and close- the ends and on the channel faces.

In 1900-1 the sum of $6,123.64 was expended in the construction of the outer piers, each 90 feet in length, and of a portion of the inner pier on the eastern side of the channel, 188 feet in length.

During 1901-2 the sum of $2,464.85 was expended in completing the work proposed, and in the construction of a cribwork extension to the western inner pier, 60 feet long and 10 feet wide, to prevent the re-opening of the old channel through the beach.

During the last fiscal year the inner end of the western pier, which for a distance of 70 feet was built lower than the outer portion, was raised to the same level, a heigh of 2 feet; and beach protection works were constructed on the eastern side of the eastern pier, to prevent the sea from washing over the beach and carrying sand into the channel between the piers. These works consist of a cribwork block, 40 feet long, 1[illegible] feet wide, and averaging 10 feet in height, and of an extension of piles, brush and stone, 50 feet in length.

The expenditure for the fiscal year was $799.94, and the total expenditure to June 30, 1903, is $13,281.78.

MAITLAND.

The village of Maitland, Hants county, with a population of about 1,500, is situated on the west side of the mouth of the Shubenacadie river, which enters Cobequid bay on its south side. The bay is the eastern extension of the basin of Minas, a large and important estuary of the Bay of Fundy. A public wharf was built here by the department between 1873 and 1876 at a cost of $6,342, and a further sum of $2,142.76 has been expended for repairing this structure. Communication with Truro, the county town of Colchester county, is by public road, but the Shubenacadie river, at this point over half a mile wide, must be first crossed by means of a ferry available the year round, except for the few winter months. On the Hants side the ferry boat has always landed on the beach, and at low water, considerable trouble is experienced in getting passengers and teams to and from the ferry boat. To facilitate the crossing of the river, the department expended, during the year 1897-8 the sum of $996.76 in constructing a ferry wharf of cribwork, 170 feet long and 20 feet wide. In the year 1898-9 the sum of $202.45 was expended in finishing the work, or rather in extending the inclined slip a further distance of about 50 feet, so as to take it out to the level of the beach in order that the horses and teams might be driven from the beach on to the wharf. The work is partially an extension and reconstruction of an old private wharf, but its location at the foot of a public street makes it entirely a public work.

In 1902-3, the sum of $1,398.61 was expended in renewing the whole top of the shipping wharf, including stringers, planking and guards; also, in raising the outer north-east corner of the L a height of two feet, to make up an ancient settlement.

The total expenditure on the shipping wharf up to June 30, 1903, is $9,884.36.

MARGAREE.

Margaree Harbour, at the mouth of the Margaree river, Inverness county, is on the west coast of Cape Breton Island, about 30 miles north-east of Port Hood. It has a narrow, intricate channel through which the tide runs at the rate of four knots, and its entrance is obstructed by a bar of shifting sand, over which there is, at times, a depth of only 5 feet at extreme low water.

Expenditures have been made by the department in the construction and maintenance of channel protection and improvement works on the west side of the entrance, and in the construction of beach protection work on the east side.

The works on the west side include works built by the provincial government and extended by the department, and works of improvement undertaken in 1900-1.

. PAPER No. 19

l provincial government works (reconstructed by the department) extend
n the shore, across what was originally a false channel, to a large rock oppo-
er entrance and thence, at right angles, to the edge of the channel.
ork built by the department extends from the north side of the outer pro-
ernment works outwards, along the west side of the channel 595 feet. It is
tions: 85 feet (built in 1876), 130 feet (built in 1879), 200 feet (built in
180 feet (built in 1899), respectively 18, 16, 18 and 20 feet in width on top,
12 and 16 feet in height. Each section is of round timber, open-faced, and
lasted and close fendered at the sides and outer ends. The top of the cover-
4 feet 4 inches to 5 feet above extreme high water. The depth, at extreme
along the channel face, originally varied from 7 to 2½ feet. Spring tides

nprovements undertaken in 1900-1, but not completed, were the deepening
channel face of the extension to 8 feet at low water over a distance of 200
the construction of a shear-dam within the entrance, 180 feet in length,
5 feet of brush and stonework 11 feet wide on top, 100 feet of pile and brush-
t wide, and 55 feet of cribwork 22 feet wide founded on brushwork in from 1
es to 9 feet 9 inches at extreme low water. During the year 1900-1 the sum
) was expended, $400 in repairing the channel face of the outer provincial
work; $1,796 in procuring materials and constructing the brush and stone-
ile and brushwork, and the substructure of the cribwork of the shear-dam,
30 in about one-half the rock excavation required to give 8 feet at low
the channel face of the extension.
1-2 the sum of $3,065.57 was expended, $995.78 in completing the shear-dam,
xception of making a roadway over the brush and stone at the inner end,
79 in completing the sub-marine work excavation with the exception of the
a small quantity of excavated material at the inner end of the cutting, and
nts of ledge rock over which there is a depth of only 6 feet 9 inches at ex-
vater.
$500 appropriated for 1902-3, the sum of $482.32 was expended: $219.41
ng the shear-dam, $61.82 in continuing the channel face rock excavation,
) in repairing and improving the channel protection works.
tal expenditure to June 30, 1903, including $3,378 expended in beach pro-
ks (east side), and a refund of $274.83 to the provincial government, is

McNAIR'S COVE.

r's Cove, Antigonish county, is on the west side of St. George's bay, about
the southward from Cape George.
kwater 400 feet in length and 20 feet in width was built on the north side
during 1872-3-4, and in 1878 a length of 20 feet was added thereto. In
ork was carried away by drift ice to within 100 feet of the shore end down
o 6 feet below low water. During the summer of 1883, 70 feet of the shore
built, and during the winter of 1884 the work was extended 94 feet. In
, the 94 feet extension was badly damaged by drift ice, and was subse-
rried away.
1886-87-88 the bottom of the damaged work was dredged out, and a work
length, 34 feet wide on top, with a sloping face on the seaward side, was
, and on its completion the total length of the breakwater was 330 feet.
ork was constructed entirely of native timber, and as it became much
y the action of the teredo, during 1890-91-92-93-94, the outer end and on
f it, for a distance of 20 feet, was protected by creosoted timber close-pil-
seaward face by talus of quarried stone.

During the years from 1897 to 1901 the timber wall, under the sloping face, which was destroyed by the teredo was renewed down to low water and close-sheathed with large hardwood timber, the stone talus was raised up to the top of the sheathing, and the work was re-ballasted and re-covered where necessary. Further, the mouth of a small brook, at the head of the cove, which was continually shifting to the detriment of the boat landing, was made permanent by the construction of a shear-dam of brush and stone.

During 1901-2, the sum of $1,197.17 was expended in placing 80 cubic yards of very large stone on the talus, and in procuring the materials required for widening and repairing the inner end of the work, which was built in 1872 and was only 20 feet wide.

Out of the amount voted for expenditure on this work during 1902-3, the sum of $1,094.58 was applied in reconstructing and widening the inner end of the breakwater, for a distance of 120 feet and to a width of 30 feet, the materials for which were procured during the previous year; and in placing about 85 cubic yards of large stone on the talus along the seaward face of the work.

The work at the outer end is 20½ feet high, 4 feet above high water springs, and the depth of water at the outer end at low water springs is 12 feet. Spring tides rise 4 feet; neaps, 2 feet.

The total expenditure up to June 30, 1903, including dredging, is $68,357.32.

METEGHAN.

Meteghan, Digby county, is situated on the south side of St. Mary's bay, 25 miles north of Yarmouth, 20 miles south of Weymouth, 2½ miles from Meteghan river, and 40 miles from Digby, the county town. The nearest railway station on the Dominion Atlantic Railway which lies approximately parallel to the coast, and has its terminus at Yarmouth, is about 7 miles distant. The whole coast of St. Mary's bay, from Digby to Yarmouth, is thickly settled, and is, in fact, almost one continuous straggling village for the whole distance of 67 miles.

Meteghan, next to Digby and Yarmouth, is the largest and most important settlement on the bay shore, having a population of 1,000 people, engaged in farming, fishing, lumbering and general trade.

The harbour works consist of a breakwater and landing pier, built of cribwork, between 1837 and 1860 by the provincial government and the inhabitants. The pier is about 300 feet long and 20 feet wide; the breakwater, 20 to 26 feet wide, runs out a distance of 925 feet from the shore, and has a return or L of 85 feet at the outer end, which is 24 feet wide and 30 feet high, standing in from 25 to 27 feet depth at high water O. S. T.

In 1875, at which date the work appears to have been taken over by the department, the breakwater was extended and repaired.

In 1878 an additional length of 100 feet was built with a portion of the L at the outer end, at a cost of $3,000, and in 1881the sum of $2,250 was expended in still further extending the structure by building an additional length of 50 feet on the L. In 1882-3 the sum of $500 was expended in reballasting and close-piling portions of the work and in other miscellaneous repairs. In 1883-4 $32 was expended in securing some of the fenders and a portion of the flooring at the outer end. In 1884-5 some damage caused by a severe gale of the previous November was made good at a cost of $96.64; a breach 25 feet long and from 4 to 6 feet deep was closed with solid work; 40 feet of new break was added. and some new ballast put in to replace that washed out. In 1887-8 the seaward face of the breakwater was close-sheathed for 700 feet in length, 575 feet of the inner face was repaired and sheathed, the whole work levelled up and some minor repairs executed; the expenditure in the said year was $1,447.33, which in the departmental report for the year is given as a refund to the provincial government on account of moneys expended by them between 1867 and 1879. In 1892-3

PER No. 19

expended the sum of $299.72 in making slight repairs to the breakwater
ary repairs to the landing wharf. In 1893-4 the sum of $2,627.54 was
king thorough repairs to the landing pier and wharf, the work done con-
lding and face fendering of the outer block 50 feet in length, building
back 8 feet thick to the next length of 16 feet, and thoroughly refender-
g the remainder of the work a length of 260 feet.
he sum of $3,141.99 was expended in constructing a re-enforcing block
length of the outer face of the L of the main breakwater. This work
ered necessary by the eating away of the bottom timbers by the limnoria,
uent settlement of the breakwater, is 100 feet long, 12 feet wide and 22
upper portion of the L was also built 35 feet wide and 4 feet high,
t to the height of the present work. The new work is well and substanti-
ound-log cribwork, well fendered, ballasted and close-sheathed on all
In 1898-9 the sum of $1,093.20 was expended in renewing a length of
o 10 feet in height, and by 8 to 10 feet in width, of the lower portion of
f the seaward face of the breakwater, which had been eaten away by the
ork close-sheathed for the same distance, and for 40 feet on the inner
eet in length of the flooring was renewed. A breach 30 feet long on the
djacent shorewards to the 120 feet before mentioned, was also closed up.
ar 1899-1900 the sum of $2,000 was expended in extensive renewals and
reakwater, the work done consisting of the rebuilding of 100 feet in
eaward face and 90 feet of the inner or shoreward face, about 8 feet
to bottom of the work, placing top cross-logs all across the breakwater
portions together, and a new floor on the portions renewed.
he sum of $3,499.95 was expended in rebuilding a serious breach made
a severe gale in March, 1900. The new block, which had to be built
, is 180 feet long, 22 feet wide and from 18 to 22 fet high. In addition
of 221 feet of the top of the breakwater was refloored and partly close-
or having been destroyed by the storm referred to.
the sum of $3,199.93 was expended in continuing the restoration of
that had been going on for the last three or four years. The work
a piece 138 feet long, in about the middle of the length of the wharf,
wn and rebuilt. Of the next 200 feet shorewards the northern face
and rebuilt 10 feet wide.
he sum of $2,999.47 was expended in completing the rebuilding of a
ddle of the breakwater, 123 feet long, 20 feet wide on top and from
h, that had been destroyed by a violent gale in the winter of 1901-2.
s rise 21 feet; neaps, 17 feet.
nditure to June 30, 1903, is $36,449.85, including a refund to the pro-
ent of $1,447.33 in 1887-8.
was transferred to the control of the Department of Marine and Fish-
12, 1888.

METEGHAN RIVER.

river, Digby county, empties into the Bay of Fundy at the mouth
ay, almost directly opposite Grand Passage, between Long island and
The village at the mouth of the river is 20 miles south of Weymouth,
f Yarmouth and 2½ miles north of Meteghan or Meteghan Cove. The
e village is about 400 people, engaged in farming, fishing, lumbering
le. The nearest railway station, on the Dominion Atlantic Railway,
allel with the bay shore, is about 4 miles from the village. On the
bout 18 miles long, are some 20 sawmills, most of which send lumber
uth of the river for export to the West Indies and the United States,
t of the output aggregating over a million feet B.M. annually. The

works here, which were built some years before confederation, presumably at the joint expense of the provincial government and the inhabitants, consist of 2 breakwaters, 1 on either side of the mouth of the river, and inclosing an area of about 3 acres, in which, at H.W.O.S.T., is a depth of 10 to 15 feet, giving ample berth accommodation and complete shelter to a large number of coasting and fishing vessels.

The north breakwater is about 400 feet long, 24 feet wide and 13 feet high at the outer end. Both breakwaters are built of stone-filled cribwork of the usual type. When the work came under the charge of the department the older portions were much decayed, and extensive repairs were needed, which were made in 1873, at a cost of $4,500. In 1881-2 the sum of $2,000 was expended in rebuilding and repairing parts of both breakwaters. In 1882-3 the sum of $3,000 was expended in close-piling and extending the south breakwater a length of 80 feet, in general repairs to the north breakwater, and in removing from the dock a quantity of rocks and boulders, which were used as ballast in the new work. In 1890-1, $265.19 was expended in removing from the channel, near the shore end of the south work, more rocks and boulders, that interfered with the keels of vessels lying alongside; slight repairs were also made under the same appropriation to both breakwaters. In 1898-9 the sum of $4,110.76 was expended in extensive renewals to the shore end of the south breakwater; the work taken down and rebuilt was 400 feet long, with an average width of 29 feet and average height of 19 feet. This length was also newly close-sheathed, and on the shoreward side of the same portion a new break was built, 276 feet long and 6 feet high. In the fiscal year 1899-1900 the sum of $4,199.98 was expended in continuing the work of restoration of the main breakwater, a length of 216 feet of the shore end of the work, adjoining outwardly the portion of the work renewed the previous year, was taken down and thoroughly rebuilt.

In 1900-1 the sum of $8,848.55 was expended in continuing the restoration of this work begun in 1898-9, and in removing gravel from the bottom of the stream between the two breakwaters; 184 feet in length was taken down and rebuilt from the bottom, an average width of 27 feet, and from 18 to 19½ feet high. The next 213 feet shorewards, which was rebuilt the previous year, was floored, including stringers, caps and plank.

In 1901-2 the sum of $3,999.99 was expended in continuing the work of restoration begun in 1898-9. The outer 113 feet in length of the work was rebuilt practically entire. In order to straighten the outer block of the work it was widened 24 feet at the outer end, the new block tapering to nothing 83 feet shorewards from the outer end. 83 feet in length also of the outer end of the work was close-piled on the north side to protect it against scour by the river which issues at this side. A considerable quantity of gravel was also removed from the river channel to improve the approach to the wharfs. In 1902-3 the sum of $942.41 was expended in completing repairs and renewals to the breakwater in progress during the past two seasons. The work done includes the renewal of the upper portion of the outer end of the breakwater and in deepening the river channel alongside the outer end of the work.

Spring tides rise 21 feet; neaps, 17 feet.

The total expenditure to June 30, 1903, is $35,731.89. This work was transferred to the control of the Marine and Fisheries Department on June 12, 1888.

MONK'S HEAD.

Monk's Head, Antigonish county, is situated on the southern shore of St. George's bay, between the harbours of Antigonish and Pomquet. A large sheet of water to the westward of Monk's Head, known locally as Dun's lake, is separated from the bay by a beach of sand, and from Antigonish harbour by a neck of marshy land.

During the years 1894-5-6, a channel for boats was opened between Dun's lake and Antigonish harbour, and a highway bridge was constructed over it at its western end.

as about 700 feet in length, and was cut down to the level of low water
d a width of about 4 feet at the bottom, with sides sloping about ½ to 1.
he soft nature of the bottom, soon after the completion of the work, the
rrents deepened the channel, cut into the slopes and undermined the
nts, causing them to settle, and it was found necessary to widen the
to protect the faces and sides of the bridge abutments with piling, and
e cut with brush and stone for a distance of 215 feet on the northern
the southern side.
00-1 the sum of $399.96 was expended in repairing the brush and stone
in securing it in place by front and rear posts, solidly driven and
r by cross-ties and longitudinal walings.
e last fiscal year the bridge abutments and the channel protection works
ned and repaired at a cost of $139.07.
expenditure to June 30, 1903, is $1,833.05.

MINUDIE.

Cumberland county, is a small village of about 250 or 300 inhabitants,
ead of Chignecto channel, and at the mouth of the River Hébert, about
of the village of River Hébert. The chief occupation of the people is
he facilities for landing goods and shipping their produce, chiefly hay,
y *nil* previous to the construction of the new government wharf. The
nd haddock fisheries are also quite extensively engaged in by some of the
nstruction of a public wharf at this place to afford the necessary land-
ng facilities was commenced in 1901-2, in which year a sum of $1,816.63
nd a further sum of $1,310.51 was laid out in 1902-3 in completing this
; its total cost to $3,166.17. Great difficulty was experienced in procur-
stone for this wharf, which entailed much extra expense. The wharf
nsists of an approach 123 feet in length, 16 feet wide on top and 9 feet
ter end. The wharf proper is 75 feet long, the first 50 feet from the
ardly, being 20 feet wide on top and the outer 25 feet 65 feet wide; the
height of 32 feet from end to end. It is built of continuous, round-log
work, well fendered and bolted; the ballast is hand-packed to the under-
r-stringers. The approach is constructed in the form of a rock bank,
about 4 feet thick, composed of large stones, whilst the centre is filled
stones, the whole being neatly gravelled to a depth of 6 inches with
avel.

NECUM TEUCH.

uch (pronounced 'Necumtau'), Halifax county, is the name given to
lying on the east side of Necum Teuch bay, at the mouth of Moser's
miles in an air line E.N.E. from Halifax, and 6 miles from Salmon
ulation of the place embraces about 400 people, engaged in farming and
out 2,000,000 feet of deal and hardwood are sawn annually at Moser's
ead of the bay. A small coasting steamer makes weekly calls, landing
sengers at a detached block of cribwork in the stream, whence they are
small boats to the settlement.
he sum of $790.13 was expended in commencing the construction of a
rk done for this small expenditure consists of a road approach, about
gth, constructed of earth embankment, and about 70 feet in length of
e shore end of the wharf. (To complete the work to its designed and
n will cost about $4,200.)

NEIL'S HARBOUR.

Neil's Harbour, Victoria county, is situated on the eastern coast of Cape Breton island, about midway between Ingonish and Aspy bays.

The harbour is at the entrance of a small bay, open to the south and south-east, and extending inland about half a mile. It is sheltered from the north and east by Neil's Head (a rocky promontory, from 10 to 20 feet above the level of high water springs), but not safe during gales from the south and south-east.

It is a large and important fishing station, and for the purpose of affording protection to the anchorage during south-easterly gales, on May 29, 1901, a contract was entered into for the construction of a breakwater off the southern end of Neil's Head, extending into 17 feet depth at low water, and the work was completed in a satisfactory manner on May 29, 1903.

The expenditure during the fiscal year 1902-03 was $13,892.50.

The work as completed includes a breakwater 226 feet in length, and a road cutting through the bank, 79 feet long and 20 feet wide at the bottom. The breakwater, excepting the inner end for a distance of 44 feet, which is of round native timber cribwork, consists of close-faced squared timber cribwork, 20 feet wide for a distance of 114 feet from the inner end, 24 feet wide for a further distance of 80 feet, and 56 feet wide for the remaining 32 feet. The work is very strongly constructed, is filled in solid with ballast, and is close-sheathed on the seaward faces, the outer end and on the inner face for a distance of 112 feet from the outer end. The substructure is of creosoted timber, and the seaward face is protected by a stone talus from high water down sloping 2½ to 1.

Spring tides rise 4 feet.

The total expenditure on this work is $17,349.94.

NEW CAMPBELLTON.

New Campbellton, Victoria county, is at the head of Kelly's cove, on the northern side of the Great Bras d'Or channel, about one mile from its entrance into the Atlantic ocean.

The cove is about half a mile in width at the mouth, and a quarter of a mile in depth, and has a depth of water of about 20 feet at low water. It is sheltered from all winds except south-westerly, but as these blow down the channel they do not cause much inconvenience.

It is the shipping place of the Cape Breton Coal Mining Company, and a large amount of coal is shipped here annually. Owing to the want of a proper and permanent ballast ground the ballast is often deposited by the vessels where most convenient to them, without due regard to its damaging effects, and in consequence the depth of water in the cove is said to have been reduced.

The sum of $5,000 was voted for expenditure during 1902-3 in the construction of a ballast wharf. A plan and specification for a work estimated to cost $11,500 were submitted to the department on December 17, 1902, but up to the end of the fiscal year tenders for its construction had not been called for.

NEW HARBOUR.

New Harbour, Guysboro' county, is on the southern or Atlantic coast of Nova Scotia, 30 miles to the westward of Canso harbour. It is merely a shallow bay, open to the south-east, at the head of which is the entrance to St. Catherines river, navigable for boats 5 miles inland.

A contract, entered into in May, 1900, for the construction of a breakwater at Black Point, on the western side of the bay, was completed September 27, 1900.

PAPER No. 19

xwater consisted of a stone embankment 160 feet in length and 7 feet ight, between the shore and 'Black Rock,' a stone embankment 89 feet 18 feet in average height, in extension of 'Black Rock;' and 150 feet 5 feet in width, with creosoted substructures, and with a talus on the sloping 1½ to 1 from high water.

nt of the cribwork over 15 feet of its width on the seaward side is 7 feet, feet of its width on the inner side 3 feet 4 inches, above extreme high depth, at extreme low water, at the inner and outer ends of the cribwork ly 6 and 16½ feet. Spring tides rise 6 feet.

southerly gale in October, 1900, the outer section of stone embankment estroyed, the cribwork was slightly damaged, and most of the stone in the seaward side of the cribwork was carried away.

2 the sum of $3,693.04 was expended in repairing the cribwork, and in it by placing a second 6-inch covering over the covering of the inner onstructing concrete walls, 89 feet in length, 12 feet in width, on top, n average height over the remains of the outer embankment, and 75 feet feet in width and 4 feet in average height over 'Black Rock;' and in to the inner embankment.

he fiscal year ended June 30, 1903, the sum of $5,999.77 was expended in feet of the concrete work between 'Black Rock' and the cribwork, by ete where undermining had taken place; in reconstructing about 30 feet nd of the stone embankment between the shore and 'Black Rock,' and in ns of heavy stone (5 to 8 tons) on the seaward side of the outer concrete he cribwork extension.

l expenditure to June 30, 1903, is $27,163.55.

NORTH RIVER.

ver, Victoria county, empties into the northern arm of St. Ann's Harbour, 7 miles in length and about 2 miles wide with a great depth of water, at t. Ann's bay, on the eastern coast of Cape Breton Island.

rf constructed by the department at Seymour's Point, on the northern side of North river, during 1898-99, 1900, consists of a road approach 64 feet feet wide, of a block and span work 63 feet in length, 20 feet wide, and of on, 175 feet in length and 20 feet wide, with a return of 20 feet at its outer pth of water at the outer end at low water, is about 9 feet.

earing and mooring plies in the pilework were to be of creosoted timber, piles in the three inner bents, which being driven above the level of low nsidered safe from the attacks of the teredo, were to be of spruce, but as shortage of cresoted piling in the cargo received, and none could be ob- island, the contractors were permitted to substitute native timber piling ther bents at the inner end.

ination of the wharf made on January 27, 1903, showed that some of the r bearing piles had been cut into by the teredo, and that the others were ned and in order to make the wharf available for traffic until it could be ired, the sum of $45.88 was expended during the fiscal year in replacing he pile-caps in the six inner bents of the wharf, to take the strain off the s.

l expenditure to June 30, 1903, is $2,409.43.

NYANZA.

Victoria county, is a settlement situated between Middle and Baddeck dian bay, on the northern side of St. Patrick's channel, an arm of the Bras d 7 miles to the westward of Baddeck, the shiretown of the county.

It is a port of call for the steamers of the Bras d'Or Steam Navigation Company, which ply daily during the season between the Sydneys and Whycocomagh, and is the shipping place for a large agricultural district.

During the years 1893-94-95 a wharf was constructed, 136 feet long and 20 feet wide, with an L at the outer end 20 by 20 feet, and a road 153 feet in length was built to connect it with the public road. The wharf is constructed of brush, with faces battering 1 to 6, and is covered with gravel.

As it was found that the wharf had not sufficient surface area to accommodate the business of the locality, during 1901-2 the sum of $890.29 was expended in widening the inner end of the wharf to the width of the outer end, viz.: 40 feet, by brush work, and new fender piles, chocks and cap timbers were placed on the old work, and the top as well as the approach were newly gravelled.

During the last fiscal year the sum of $257.79 was expended in the construction of a warehouse, 30 feet long by 18 feet wide with 10 feet posts, on the inner end of the wharf. The roof and the sides of the building were shingled, and the whole of the outside painted with red metallic paint.

The total expenditure to June 30, 1903, is $3,091.23.

OGDEN'S POND.

Ogden's Pond, Antigonish county, is on the western shore of St. George's bay, about 13 miles south from Cape George and 9 miles from the town of Antigonish. It is a small sheet of water, about 100 acres in extent, separated from the bay by a sand beach of from 130 to 250 feet in width.

For the purpose of rendering the pond, which has a depth of over 10 feet at low water, accessible to boats and small crafts, during 1900-1-2 a channel 30 feet wide and about 825 feet in length was cut through the beach, down to a depth of about 1½ feet below low water, and a channel protection work, 350 feet in length, was constructed on the northern side of the entrance. The work consisted of: a brush and stone embankment 70 feet long and 8 feet wide on the top, with sides sloping ½ to 1; a pile, brush and stone work, 260 feet long and 10 feet wide from outside to outside of pilework, close-sheathed on the seaward face; and of a round-timber cribwork block at the outer end, 20 by 20 feet on top, with sides sloping 1 in 8, with creosoted timber substructures and close-sheathed on all outer faces.

During the last fiscal year the sum of $649.87 was expended in repairing and levelling up the outer block, which had settled by undermining of the sandy foundation, and in protecting its base with brush and stone; also in replacing stone in the top of the pile, brush and stone work, which, being uncovered, had been washed out by the sea.

The expenditure on this work to June 30, 1903, is $4,333.89.

PARKER'S COVE.

Parker's Cove, Annapolis county, is a small indentation on the south-east shore of the Bay of Fundy, 15 miles north-west of Digby Gut, and 7 miles north of Annapolis, the county town. The population of the settlement is about 250 people, engaged in farming and fishing.

In 1883-4 the department constructed a small breakwater, which was substantially built of round-log cribwork, stone-filled, 200 feet long, 23½ feet to 26 feet wide on top, and at the outer end 16 feet high, where at high tide there is a depth of about 11 feet of water.

In 1900-1 the department extended the breakwater a distance of 101 feet, at a cost, by contract, of $3,749. The new block is 26 feet wide on top, and from 16 to 19 feet high, substantially built of round-log cribwork, filled with ballast, well fendered and close-sheathed on the seaward side and outer end.

ER No. 19

ne sum of $73.50 was expended in placing a quantity of large stone on of the breakwater, near its outer end, to prevent the waves from under-

ne breakwater was extended a further length of 130 feet, with an L l, having a face length of 82 feet. The work, which was built by con- f $10,212.60, is from 25 to 29 feet high, the stem 26 feet wide and the on top. The landward side batters 1 in 6, while the eastward side is ided with a solid timber break 4 feet 6 inches high. The work was 11, 1902, and the whole work thoroughly well completed on November year. The extension is very strongly built of round-log cribwork, with stone ballast, well fendered and bolted and close-sheathed on the

s rise about 30 feet.
xpenditure to June 30, 1903, is $16,327.14.

PEREAUX.

ng's county, is a rich and prosperous agricultural district, with a popu- 300 or 400 people, situated on the west side of the basin of Minas, 3 Kingsport and 5 miles south of Cape Blomidon. From Kingsport to is a thickly settled and fertile agricultural and fruit-growing district. year 1901-2 the sum of $661.99 was expended in the partial construc- harf for the purpose of shipping fruit, farm produce, &c., and the land- l general merchandise. It was satisfactorily completed in the year enditure of $1,329.96. The wharf is a pile structure, 180 feet long, 25 t the outer end 20 feet high, where at high water there is a depth of 17

diture up to June 30, 1903, $1,991.95.

PETIT DE GRAT.

rat inlet, Richmond county, lies between Petit de Grat island and emity of Island Madame. The main entrance is at the southern end tic; the northern entrance from Rocky bay is obstructed by outer through which passages for boats at ordinary low water were opened nt between 1879-82.

8-99-1900-1 both channels were widened and improved by hand dredg- ork protection was constructed on the western side of the outer chan-

of June, 1901, the outer channel was about 350 feet long and 25 feet oth of 2 feet at low water, while the inner was 285 feet long, 20 feet the same depth as the outer channel. The protection work, 298 feet constructed of ordinary round timber, was fully ballasted but not

$1,000 was voted for expenditure during 1901-2, in the reconstruc- n of the protection work and for deepening the channel; but as it he beach on the eastern side of the outer channel was moving rapidly l, and had already encroached upon the channel, and the amount not sufficient to check the movement, the amount was not expended; ded to abandon the old work and to open a new channel to the east-

$2,600 was appropriated for expenditure during 1902-3 in opening , and for protecting its eastern side by cribwork.
nnt appropriated, the sum of $90.91 was expended in procuring part equired for the construction of the channel protection work.

The proposed channel will be about 500 feet to the eastward of the old one, and is to be 285 feet long, 20 feet wide at the bottom with sides sloping 3 to 1, and excavated to a depth of 2 feet below low water; and the protection work is to be 200 feet in length, 12 feet wide for a distance of 160 feet from the inner end, and 20 feet wide for the outer 40 feet, constructed of round timber cribwork, fully ballasted and fendered, the outer 40 feet covered with plank, and the eastern face, the end and the western face for a distance of 40 feet from the outer end, are to be close-sheathed.

Spring tides rise 6 feet.

The total expenditure on this work to date is $6,166.36.

PICTOU ISLAND.

Pictou island is situated in the Strait of Northumberland, about 10 miles north-east of the entrance to Pictou harbour.

There are two wharfs on the south side of the island, one near the west end and one, known as the 'East wharf,' near the centre. The west wharf is 324 feet in length and 20 feet in width (with the exception of the inner 55 feet, which is 12 feet wide), and had an L on the east side at the outer end which measured 20 by 30 feet previous to its enlargement in 1902-03. The east wharf is 328 feet in length and 20 feet in width. The depth at extreme low water at the outer ends of the east and west wharfs are respectively 4 feet 6 inches and 4 feet 9 inches. Spring tides rise 6 feet.

In 1901-2 the sum of $609.60 was expended in repairing the east wharf.

During the fiscal year ended June 30, 1903, the sum of $942.56 was expended in repairing and strengthening the west wharf. The floor stringers and covering of the outer end were renewed, and a 30 by 20 foot block was placed at the outer end of the L.

The total expenditure to June 30, 1903, including the refund of $400 made to the provincial government, is $13,112.44.

PIPER'S COVE.

Piper's Cove, Cape Breton county, is on the north-east end of the Great Bras d'Or lake, between the entrance to East bay and Barra strait.

The cove is open from south to west, the heaviest seas being from the south-west, where they have a rake of 12 miles. At the head of the cove there is a small pond, separated from the lake by a beach of sand about 100 feet wide and 4 feet high above lake level.

As the sum of $500 granted for expenditure during 1902-3 for a boat harbour was found to be entirely too small to construct any work of a practical character, particularly as the teredo is very destructive in the lakes, and creosoted timber would have to enter largely into the construction of any work there, the amount granted has not been expended.

A report on the construction of a work, such as desired by the inhabitants, was submitted in February, 1903.

PINCKNEY'S POINT.

Pinckney's Point, Yarmouth county, is a small fishing and farming village of about 150 people, situated near the extremity of the headland between Chebogue river and Little river, about 12 miles S.S.W. of the town of Yarmouth.

In 1901-2 the department expended the sum of $998.73 in constucting a small breakwater for the purpose of affording some small measure of protection to the fishing boats, and to serve also as a landing wharf for an occasional schooner load of general merchandise for local consumption.

PER No. 19

consists of a block of round-log cribwork, 20 feet square, 14 feet high, ach 93 feet long, 20 feet wide and from 4 to 13 feet high, built of stone on each side with split boulders. The outer edge of the crib-block is at k.

the sum of $48.69 was expended in flooring the block of cribwork 20 feet he previous year and the placing of 8 fenders.

les rise 12 feet, neaps about 11 feet.

PLEASANT BAY.

Bay, Inverness county, is on the western coast of Cape Breton Island, 24 Cheticamp, and about midway between that place and Cape St. Law-

was made here in October, 1902, and a report with estimate was sub-ember, 1902, in which it was stated that the residents are desirous of hav-onstructed in place of the boat harbour first applied for.

PLYMOUTH.

, Yarmouth county, is a small but thriving farming and fishing settle-300 people, situated on the west side of Tusket river, near its mouth, south-east of the town of Yarmouth.

harf was built here by the inhabitants, many years ago, for the accommo-ng craft and small vessels, loading fish and general farm produce, and anure. Being so far dilapidated as to no longer serve the public need, t in 1901-2 expended the sum of $488.21 in building a new wharf of pile-ong, 25 feet wide and from 6 to 9 feet high, with an approach of gravel-ankment 100 feet long.

the sum of $97.38 was expended in removing some obstructions alongside, ting the road to the pile-wharf built the previous year.

expenditure by the department is $1,045.59.

les rise 13 feet, neaps about 10 feet.

PORT GEORGE.

rge, Annapolis county, is a village of some 400 people situated on the the Bay of Fundy, 37 miles north-east of Digby Gut, 42 miles south-west y, 6 miles south-west from Margaretville, and 7 miles north-west from the Dominion Atlantic Railway.

rs before Confederation, the provincial government built a western break-eastern pier or wharf. The breakwater is 440 feet long, from 25 to 35 top, and at the outer end, where there is about 21 feet of water at T., it is 25 feet high. It is built of round-log stone-filled cribwork, the ward face and outer end being closely sheathed.

f on the eastern side of the little harbour is 205 feet long, 20 feet wide, gh at the outer end. It is built or round-log cribwork, and the outer end, ds a small lighthouse, is close sheathed. In 1874 the harbour was taken the Public Works Department, and in that and the following year the was expended in repairing and refacing the breakwater, which was much the autumn of 1888, the outer end of the breakwater was destroyed by n, 165 feet in length being wrecked, and an additional length of 30 feet Before repairs could be made, a second storm destroyed the damaged g 195 feet of the work a complete wreck, and rendering the harbour prac-In 1900-01 the destroyed portion of the work was rebuilt by contract.

In April, 1894, an exceptionally severe north-east gale caused a serious breach in the breakwater at about midway of its length, or immediately shorewards from the new outer block. The breach was 40 feet long for the full width of the work, and about 17 feet high; it was closed in the autumn of the same year.

In 1900-1 the sum of $400 was expended in repairing the eastern breakwater wharf, the outer 30 feet in length was refloored, and the close sheathing for the same length was renewed. New fenders, guard timbers and mooring posts were also placed. The sum of $1,653.60 was also expended in the construction of a detached breakwater, lying about 200 feet eastwards from the end of the main work. The object of this is to break the seas, and afford a much needed shelter to schooners lying alongside the breakwater.

In 1901-02 the sum of $2,297.46 was expended in continuing the construction of the detached breakwater begun the previous year. The work, so far built, is 102 feet long, 32 feet high at the lower end and 26 feet at the upper, 20 feet wide at top. It is plumb on the seaward face, and batters one in four on the back.

In 1902-3 the sum of $2,287.46 was expended in beginning the construction of an extension of 100 feet in length of this work.

Spring tides rise 30 feet.

The total expenditure to June 30, 1903, is $31,797.51, including a refund to the provincial government in 1887-8 of $1,076.75. This work was transferred to the control of the Marine and Fisheries Department on June 12, 1888.

PORT GREVILLE.

Port Greville, Cumberland county, is a village of about 300 people, 12 miles west of Parrsboro. Important ship-building and lumbering interests are located in this place, which are mainly dependent upon the security of its harbour. This harbour is formed by a high gravel bar lying parallel to the shore and inside of which the river runs for a half mile before reaching low water mark. For the purpose of protecting this harbour, which was threatened with destruction, the department, in 1874, constructed upon it a cribwork wall 2,200 feet in length with an average height of 7 feet. In 1886-87 a breakwater was built off the eastern end of this cribwork for further protection to the harbour. It is 250 feet long, 21 feet wide on top, with an average height of 20 feet, and has a slope on the seaward end of ½ to 1, whilst the seaward face and outer end are sheathed with 6-inch plank and well bolted. In 1889-90 the sum of $2,500 was expended in rebuilding the top of the cribwork wall for a distance of 2,040 feet and to an average depth of 5 feet. A cribwork wall 120 feet in length was also built along the bank of the north side of the mouth of the harbour, to prevent the sea from washing away the gravel bank on that side. In 1902-3 the sum of $4,071.10 was expended in totally rebuilding the beach protection, which being completely decayed, imperilled the safety of the harbour. The total length rebuilt was 2,004 feet, with a bottom width of 13 feet, a top width of 10 feet and an average height of 7 feet. The material used was excellent, and the workmanship of a high class. It is thoroughly ballasted with stone obtained from the fields and the adjoining cliffs which proved somewhat costly, but on the whole the work was very cheaply built.

PORT HAWKESBURY.

Port Hawkesbury, Inverness county, is on the eastern side of the Strait of Canso, nearly opposite Port Mulgrave.

The sum of $2,000 was appropriated for expenditure in 1901-2 towards the construction of a wharf. During the year a survey was made and a plan and specification prepared for the construction of a wharf known as the 'long wharf.'

A contract was entered into on September 11, 1902, for the reconstruction of the 'long wharf' for the sum of $9,450.

R No. 19

der contract comprises the construction of an abutment 35 feet in nd side walls of stone; the reconstruction from 2 feet above low water ock and span work, including 8 cribwork blocks 31 to 38 feet in length, in width; and the reconstruction and extension of the 'head,' includ- o 2 feet above low water, of parts of 2 cribwork blocks and the con- ork and pile 'head' 73 feet 9 inches in line of work by 112 feet.
was commenced April 23, and satisfactory progress was made up to en the new cribwork over all the blocks, excepting one, was approach-

ure during the fiscal year 1902-03 was $2,718.01.

PORT HOOD.

he shire town of the county of Inverness, is on the west coast of Cape miles north of the northern entrance to the Strait of Canso.
was formerly a secure one, Smith Island, which forms its west side, ected with the mainland by a range of sand hills. In 1839 the sea made this protection; the opening, at first narrow, was enlarged by the tidal reasing rapidity until it was entirely swept away. The harbour is g northerly gales, except in a small cove on the east side of Smith

east side of the harbour, commenced by the provincial government in lly 550 feet in length and 24 feet in width, with an L on the south end, 100 feet in length and 25 feet in width. It came under the deral government in 1871, since which time extensive repairs and en made, including the construction of a new block 125 by 25 feet at 873; the construction of a block 50 by 32 feet at the south end of the the construction of a block 71 by 24 feet at the outer end in 1889-90. al government work was of square timber, close-faced; the additions ructed by the department are of round timber, laid open-faced. The rotected on the seaward side, at the outer end, and on the south end the L, by close piling, and on both sides to within 74 feet of the outer lus.
iscal year 1902-3, the sum of $199.99 was expended in urgent repairs, ng ballast where required and temporary repairs to the covering.
penditure up to June 30, 1903, including the sum of $916.11 refunded ernment, is $60,092.19 and $1,943.60 for dredging.

PORT LATOUR.

Shelburne county, is a fishing and farming community, situated est of Shelburne town, with a population of 700.
is about 4 miles long, north and south, and 2 miles wide, east and epth of water of from 5 to 7 fathoms.
outer harbour is somewhat exposed to the south-east (this being the ich the most severe and destructive gales come), the inner harbour some measure of shelter to the northward and eastward of the sand en Page's Island and Swain's Point, on which there is from 6 to 8 L.W.O.S.T. Since, however, an unusually heavy storm some years e flats the thick growth of eel grass with which they were covered w washes over them. Vessels lying at anchor, awaiting a cargo or d, are in danger of dragging ashore, and the need of a protected efore unquestioned.
ctually meet this requirement, it was necessary to construct a break- om Swain's Point and running in a north-easterly direction. Dur-

ing the year 1898-99 the sum of $3,335.98 was laid out, and during the next fiscal year a sum of $3,201.87, whilst during the fiscal year 1902-3 the further sum of $1,009.90 was expended, thus making a total expenditure to June 30, 1903, of $7,547.79 upon this work. The work done in 1902-03 consisted in the construction of a section of breakwater or rock bank, 62 feet long, which has a width on top of 25 feet and an average height of 16 feet, together with the completion of a former section of similar work, which when work ceased in 1901 was but two-thirds complete, so that practically all the stone work now necessary for this structure is completed. When work is resumed upon this structure it will have to be constructed of continuous round log stone-filled cribwork well fendered and bolted and sheathed, with the top covered with good merchantable 4-inch plank, whilst the logs used in the bottom for 6 to 8 feet in height should be all creosoted timber.

This breakwater as it now stands has a length of 392 feet, a common width of 25 feet on top, with slopes of 2 horizontal to 1 vertical on the seaward side and 1 horizontal to 1 vertical on the harbour side, the height ranging from 10 to 17 feet. The rock bank which constitutes the breakwater is built as follows: An outer shell, 4 feet wide, is formed on both sides of the bank from end to end of its full height, viz., of split boulders of either granite, whin or traprock (a fine masonry stone, very plentiful in this section of the country), and the intervening space between the walls of this shell is filled with smaller stones of from 20 to 300 pounds in weight to within 1 foot of the top, the breakwater being completed with 6 inches of small stones covered with 6 inches of coarse gravel. The joints on the faces of the work are grouted with cement, but the work, though strong and solid, is only of the lowest class of masonry. On the outer or seaward side a break of stone, 2 feet in height, surmounts the structure for its entire length, whilst a rip-rap wall, 5 feet in height, protects the bottom of the outer work. It is estimated that the completion of this work will necessitate an additional outlay of some $16,000.

PORT LORNE.

Port Lorne, formerly called Port William, or Marshall's cove, Annapolis county is situated on the Bay of Fundy, 32 miles north-east from Digby Gut, and 6 miles north-west from Paradise station, on the Dominion Atlantic railway. The settlement comprises about 300 people, engaged in fishing and farming.

The breakwater was begun in 1835, at the joint expense of the inhabitants and the provincial government, the outlay on the work up to 1867 being $16,000. The first work done by the Department of Public Works was in 1873-4, when the breakwater was extended a length of 67 feet. In 1882-84 the work was further extended a length of 100 feet, width 35 feet, and height 25 feet. The new block was built close faced with square timber both inside and outside, and provided with a break 4 feet high. During the next few years several repairs were made. In 1897-8 a re-enforcing block was built on the seaward face and outer end of the breakwater 78 feet long 27 feet high and 13 feet wide, in addition to other important repairs made.

In 1900-1 the sum of $2,186 was expended in important repairs. The work done consists of the building, to the full height of the breakwater, of a portion of buttress on the seaward side, 91 feet long; the rebuilding of 12 feet in length of the top of the main work immediately shorewards from the new portion of buttress, and the reflooring of the greater part of the length of 91 feet, abreast of the buttress.

In 1902-3 the sum of $1,198.48 was expended in rebuilding a portion of the shore end of the seaward face of the breakwater, 50 feet long, 15 feet wide and from 6 to 15 feet high, with solid stone-filled cribwork; also in rebuilding a portion of the break on the shore end, 33 feet long, 8 feet wide and from 6 to 10 feet high.

The total expenditure to June 30, 1903, is $19,339.11, including a refund to the provincial government of $1,589.33 in 1887-88.

The work was transferred to the control of the Department of Marine and Fisheries on June 12, 1899.

Spring tides rise 30 feet.

ER No. 19

PORTER'S LAKE.

ke is a long and narrow strip of fresh water, lying nearly north and about the middle of Halifax county, or about 15 miles east of the pro- It is about 18 miles in length, from a quarter to half a mile in width, ing of good depth for almost its entire length, it is navigable for vessels s, to the extreme head. The normal level of the lake is some two or ve high water O. S. T., which on the coast here rise 6 feet, and neaps

1873 the outlet, which was directly into the Atlantic through a gravel) feet wide, was navigable for schooners drawing 6 feet of water, and a ffic was done then on the lake in the export of timber, lumber, cordwood, produce and fish. Since that time the outlet has been gradually and ing up with the accumulation of gravel washed in by southerly and In order to maintain the outlet, to prevent the roads along the margin being flooded, and also to admit fish into the lake, the following small ve been made by the department:—

. . . . .	$ 200 00
. . . . .	200 00
. . . . .	200 00
. . . . .	147 00
. . . . .	100 00
. . . . .	200 00
00.	150 00
. . . . .	49 99
	$1,246 99

nditures have resulted in but slight temporary relief and no permanent ne department, in 1900-01 expended the sum of $8,262.44, in beginning n of a permanent channel through the neck of land, 2,400 feet wide, main body of the lake from the extreme head of Three Fathom Harbour. a further sum of $5,987.24 was expended on the permanent outlet. In n of $2,455.67 was expended on the permanent, and $49.99 on the tem- tlet.

nditure to date:—

rmanent outlet.	$16,705 35
porary outlet.	1,246 99
	$17,952 44

PROSPECT.

Halifax county, is a settlement of some three or four hundred people, Atlantic coast, 15½ miles in an air line south-west from Halifax, 21 road, and about the same distance by water. The land in the neigh- very sterile and rocky and quite unsuited to agriculture, the inhabi- dependent for a livelihood on fishing, which is an important industry, of lobster, cod, haddock, mackerel, herring and other fish being caught The cove, around which the village is built, and which carries a depth 5 feet of water at L. W. O. S. T., is a quarter of a mile long and from ndred feet wide. Its mouth is well protected from the open sea by Saul's umerous reefs and shoals, so that heavy seas cannot enter. Around the ous small, flimsy wharfs and stages, for the landing and curing of fish, there insufficient depth of water at these stages, but belonging to private rchants and the general public importing flour, coal and other merchan-

dise, have in the past been obliged to unload their goods from schooners lying at anchor in the harbour, into boats and get them ashore as best they could.

In the fiscal year 1902-3 the department expended the sum of $767.26 in the construction of a small wharf of pile-work. On June 30, the wharf was about half finished.

RAGGED HEAD.

Ragged Head, Guysboro' county, on the north side of Chedabucto bay, 6 miles east of Guysboro' harbour, is a triangular sheet of water with an area of about 180 acres and a depth of from 2 to 5 fathoms. It is inclosed by shingle beaches, through which there is a narrow channel on the western side of Ragged Head.

During the years 1878-83 the channel was improved and protection works, consisting of 110 feet of cribwork and 428 feet of brush and stone work, were constructed on the southern side. In 1899-1900 and 1900-1 small amounts were expended in repairing the cribwork and in deepening and re-opening the channel.

During the fiscal year 1902-3 the sum of $1,000 was applied in constructing a cribwork block 49 feet in length, 16 feet in width on top, and 11 feet in height, in extension of the channel protection work and in re-opening the channel.

The total expenditure to June 30, 1903, is $6,144.97.

The surface of the pond is 3 feet higher (at low water inside) than low water outside; consequently there is a fall at low water of 3 feet in the length of the channel (600 feet). The depth in the channel at low water is about 3 feet, except near the entrance, where it is about 1 foot.

ROUND BAY BEACH.

Round Bay Beach, Shelburne county, is about 3 miles east of Negro harbour, and 13 miles south of Shelburne town. The beaches of this bay, which are composed of fine white sand, formed a protection to several small coves on its northern side, which in turn formed small boat harbours of refuge. This fine white sand is continually blowing away and from time to time, breaches are made through the beaches by the many storms which occur along this coast, so that the outlets of these little boat harbours are practically destroyed. The department from time to time have made several small expenditures of $100 and $50 in placing brush along the line of the top of the beach to catch this drifting sand. This kind of work has in the past proved temporarily successful, but when the spills become detached from the branches the sand, meeting with but little resistance, escapes from the inclosure and new breaches in the beaches are effected.

During the fiscal year 1901-2 the sum of $496.74 was expended by the department in repairing the Round Bay Beach works which had been almost utterly destroyed by the previous season's storms. This work was intended to be only a temporary measure of relief, but it did not stand the stress of wind and sea even for a short time, except that small portion of which was constructed of cribwork. It was therefore resolved to continue this cribwork retaining wall the whole length of the beach. This has been done in 1902-3 at a cost of $2,326.81. The work constructed is 1,400 feet in length, and has a uniform width of 8 feet on top for 1,300 feet in length it is 6½ feet high for the remaining 100 feet, 10 feet. It consists of round-log, continuous, stone-filled cribwork, well bolted and fendered, and the cost of construction was light, being little over 3 cents per cubic foot.

SANDFORD.

Sandford, Cranberry Head, is situated on the Atlantic coast of Nova Scotia, at the extreme western point of Yarmouth county, 7 miles north-west from the town of Yarmouth, The settlement in the neighbourhood, which has for some years been known

PER No. 19

as a population of from 300 to 400 people, engaged in fishing and

reakwater was begun by the inhabitants, aided by the provincial gov-
376 the sum of $2,000 was expended by the department in extending
et. In 1878-9 the sum of $1,000.08 was spent in constructing an addi-
50 feet and in repairing the older portions. In 1880 the sum of $499.95
repairing the damage done by a storm in August, 1879. In 1883-4 $100
re-sheathing the outer end and in effecting needed repairs. In 1885-6
airs were made to the outer face of the breakwater at a cost of $109.
llaneous repairs were made at a cost of $768.74. In February, 1892,
ches were made in the work by heavy gales, and a quantity of gravel
gh into the little boat harbour inside. If repairs had been made with-
ork could probably have been saved, but nothing was done, and in the
e years about 300 feet, *i.e.*, the whole work except the outer block, was
emaining piece being 60 feet long, 22 feet wide, and from 18 to 20
re this date six or seven schooners of 10 to 20 tons each, besides a num-
boats, were owned in the place, and considerable fishing was done.
action of the breakwater, and owing to the consequent lack of shelter,
d boats were disposed of, and the fishing industry in the locality prac-

he sum of $3,497.25 was expended in partially rebuilding the shore-
the work on a new site, which was rendered necessary by the altered
the beach; the remaining outer block was also thoroughly repaired.
of which a length of 200 feet was built during the year, starts at the
t 350 feet eastward of the point where the former work began, and
a north-westerly direction towards the outer block of the old work,
as connected. Besides the portion of the breakwater built during this
at channel, about 40 feet long and 8 feet deep, was excavated through
lea of the breakwater, to give access to a salt water pond which forms
er for fishing vessels during the heavy gales in the winter season.
0 the sum of $2,599.96 was expended in completing the rebuilding
er begun last year, the portion of the work built being 81 feet long
le, with an average height of 12 feet. A piece of beach protection
ong, 10 feet wide, and from 6 to 8 feet high was also built in a west-
om the shore end of the breakwater to prevent the seas from driving
e beach into the little open pond which shelters the boats of the fish-
900-1 the sum of $149.92 was expended in replacing the ballast that
by the heavy storm in October, 1900, out of the beach protection work
reakwater on its west side, and to prevent a recurrence of the damage
ith poles.
year 1901-2 the sum of $2,542.18 was expended in extending the
stance of 90 feet. The new block is 26 feet wide and from 20 to 25
ughly well built of round log cribwork, close-sheathed on the outer
d face, filled with ballast and provided with a break 5 feet high.
he sum of $1,004.47 was expended in extending the breakwater by
long, 25 feet wide and 25 feet high, strongly built of round log crib-
ballast and close-sheathed on the seaward face and outer end.
expenditure to June 30, 1903, is $15,568.70, including a refund of
provincial government in 1887-88.
vas transferred to the control of the Department of Marine and Fish-
2, 1888.

SANDY COVE.

e, Digby county, is a thrifty and beautifully situated fishing and
ent, of some 400 people, situated on Digby Neck, 19 miles south-west

On February 12, 1903, a contract was entered into with Messrs. Hayden & Oliver of Digby, for the construction of a breakwater in the cove on the eastern, or Bay of Fundy side, of the neck, with the object of affording some much needed shelter to the fishing fleet. The amount of the contract is $13,000. The breakwater when completed will be 211 feet long, 30 feet wide on top and 31 feet high at the outer end, where, at H.W.O.S.T., there will be about 27 feet of water. The work is designed to be of solidly built round log cribwork, the lower portion, up to 5 feet above L.W.O.S.T., being of creosoted timber to resist the attacks of the limnoria, which are here prevalent and destructive.

On June 30, 1903, the expenditure was $2,510.51.

Spring tides rise 23 feet; neaps, 19 feet.

SHORT BEACH.

Short Beach is the name of a small fishing and farming settlement of about 100 people, situated on the coast of Yarmouth county, 8 miles north of the county town, 1½ miles north of Sandford and 3½ miles south of Port Maitland. The fishing fleet comprises a dozen small boats. On February 13, 1903, a contract (No. 4556; amount, $8,095) was entered into with Messrs. Crosby, Landers & Moses, for the construction of a breakwater for the protection of the fishing fleet. The work, when completed, will be 400 feet long, 25 feet wide on top, and from 5 to 14 feet in height, solidly constructed of round-log cribwork, well fendered, ballasted and bolted, and close-sheathed on the seaward face and outer end.

On June 30, 1903, the value of the work done on the contract was $1,773.10.

SOBER ISLAND.

Sober island, Halifax county, lies at the mouth of Sheet harbour, about 60 miles east of Halifax; it is about 3 miles in length, ¾ in average width, and is separated from the main land by a narrow channel. The population comprises about 50 families, engaged almost wholly in fishing. There is a lobster packing establishment on the island, and three small stores.

In 1902-3 the sum of $797.18 was expended in the construction of a public wharf. The work consists of a rock bank approach, 36 feet long, and from 2 to 10 feet high, three blocks of cribwork 10 x 20 feet on top, and from 10 to 19 feet high, and two spans of 13 feet each. At low water ordinary spring tides there is a depth of 11 feet of water at the outer end of the work. Spring tides rise 6 feet, neaps 5 feet.

SOUTH GUT.

South Gut, Victoria county, is the local name of the southern arm of the head of St. Ann's harbour, which is a fine basin 7 miles in length, 2 miles wide, and having a great depth of water, situated at the head of St. Ann's bay, on the eastern coast of the Island of Cape Breton.

A wharf was constructed during 1890-1 on the southern side of South Gut, 198 feet in length and 20 feet wide, extending to 6 feet at low water, and consisting of a shore abutment 48 feet long and of four 20-feet blocks, built of native timber cribwork, with intervening spans 17¾ feet in length.

In order to render the wharf accessible at all times of tides for the steamer 'Weymouth,' which calls here twice a week on her trips from the Sydneys to the north shore, and at the same time to facilitate the turning of teams on the wharf, on September 27, 1902, a contract was entered into for an addition to the wharf of 40 feet in length, extending to 8 feet in depth at low water, and consisting of a span 20 by 20 feet and of

APER No. 19

ock 20 by 40 feet, and the work was completed on June 30, 1903. The ork was $1,248.12.
des rise 6 feet.
expenditure on this work up to June 30, 1903, is $3,506.06.

SOUTH-WEST PORT MOUTON.

st Port Mouton, Queen's county, is a small settlement on the south-west Mouton bay, situate 5 miles south-west of the village of Port Mouton and n-west of the town of Liverpool. In 1887 a breakwater was built at this protection of fishing boats, which is 150 feet long, 24 feet wide on top eak 4 feet high along the whole eastern or outer side. The eastern side end, which is 11 feet high, are all close-faced cribwork. In 1902-3 repairs were made to the outer end, the break was rebuilt and the top 4 ire breakwater were renewed. Besides this an extension 42 feet in length, and 13 feet high, was built. The total expenditure incurred in the said s $1,500. This amount covers the cost of 100 cubic yards of stone put in cubic feet of cribwork built and fully ballasted to the underside of the , and the sheathing of 140 feet in length of the work with 7-inch logs h thicknesses and flatted and bolted. It is hoped that this breakwater as ll thoroughly protect the cove from which the residents fish, and is in ondition as to require no further repairs for the next ten years.

ST. ANN'S BEACH.

s Beach, Victoria county, is on the eastern coast of the island of Cape eparates St. Ann's Harbour from the bay of the same name.
ance into St. Ann's Harbour is between the southern end of the beach and and is very narrow, with great depth of water and a tidal current of four obstructed by a dangerous bar outside, carrying but 18 feet at low water. h extends from the northern to within 180 yards of the southern side. and rbour. It is about a mile and a half in length, from 200 to 400 feet in om 5 to 7 feet high, above high water level and is composed of large rolled ngle; and besides forming a protection to the harbour, is used as a high- ry which plies between its southern end and Englishtown, on the southern trance.
n the last few years there has been a slight but gradual wearing away of he beach, at its southern end, caused by the action of the sea, and it was his action, if permitted to continue, might eventually cut the channel each, and endanger the stability of the harbour, the sum of $1,800 was enditure during 1902-03 to be applied in the construction of the beach rks.
he amount voted, the sum of $1,749.89 was expended in building a crib- on on the outer side of the southern end of the beach, 840 feet in length, d 6 feet wide on top with sides sloping 1 in 8, constructed of round timber, d on a brush foundation, fully ballasted and close-sheathed on the seaward .

SUMMERVILLE CENTRE.

ville Centre, Queen's county, is a small fishing village of about 150 people, s south-east of the town of Liverpool.
he department built a breakwater about 200 feet long, 20 feet wide on top, igh at the outer end. The whole work was built of square timber, close- k. In the winter of 1898-99 this work was completely destroyed, and dur-

ing the fiscal year 1900-01 the department reconstructed this breakwater. This time, however, instead of rebuilding with wood, it was deemed advisable, owing to its exposed position, to reconstruct the work in a more permanent manner on a site contiguous to the old one. The new breakwater was constructed entirely of large stones, cemented together and fastened with iron cramps. This work, which cost $2,263.35, comprised an approach and a main structure. The approach is 58 feet long, 12 feet wide on top, and 6 feet high at its outer end. The main structure is 90 feet long, 24 feet wide on top, 33 feet wide at the bottom, and 16 feet high at its outer end. During the fiscal year 1902-03 this breakwater was lengthened 30 feet at a cost of $999.69. The work done is 24 feet wide on top, 33 feet wide on the bottom and 18 feet high at the outer end. It is of the same character as that previously done and most excellently constructed. It contains about 540 cubic yards of heavy, granite masonry, well cemented and secured by iron dogs or cramps.

THREE FATHOM HARBOUR.

Three Fathom Harbour, Halifax county, is an irregular shaped inlet of the sea, about one mile in maximum length, from north to south, by one quarter to three quarters of a mile wide. It is situated about 15 miles east of Halifax Harbour. The harbour is much used and frequented by fishermen from the contiguous settlements of Seaforth and East and West Chezzetcook, containing in the aggregate a population of some 500 or 600 people. To prevent the sea for breaking through the narrow shingle beach that separates the harbour from the Atlantic, the department, in 1878, constructed cribwork along the crown of the beach. Its original length of 1,050 feet has been extended to 1,085 feet, its height is from 4 to 8 feet and its width 13 feet. It is built of round-log cribwork, well fendered and ballasted.

In the fiscal year 1901-2 the sum of $1,189.91 was expended in taking down and rebuilding a length of 120 feet on the northern end of the work, which was in a state of dilapidation.

In 1902-3 the sum of $1,785.57 was expended in repairs and improvements, the work done consisting of the thorough repair and rebuilding the top of 250 feet in length of the beach protection, and the construction of a new block on the northern end, 84 feet long, 12 feet wide and 11 feet high. The total expenditure by the department up to June 30, 1903, is $9,090.66.

'THE GATE.'

'The Gate' or 'the Sluice,' is the name given locally to a shallow opening or passage about half a mile wide and dry at low water ordinary spring tides, between the mainland of Comeau's Hill or Point and great Tusket Island, Yarmouth county. It is 12 miles in a direct line S.S.W. from Yarmouth. At and near high water the passage is much used by fishermen going between Tusket Island and Goose Bay on the east, and Chebogue Harbour and adjacent waters on the west. To enable the channel to be used during a longer period in each tide, the department in 1901-2 expended the sum of $1,000 in deepening and widening it. The size of the channel formed by removing granite boulders with which the whole passage is covered, was 540 feet long and 30 feet wide.

In 1902-3 a further sum of $1,000 was expended in widening the channel by an additional 20 feet, making it 50 feet in total width. At low water ordinary spring tides there is about one foot of water in the channel, and fishing boats of the district can use it at almost all stages of tide.

Spring tides rise 10 feet, neaps 8 feet.

The total expenditure by the department to June 30, 1903, is $2,000.

TIDNISH.

in Cumberland county, near the mouth of the Tidnish river and about
f the boundary between New Brunswick and Nova Scotia.
rtment in 1890-91 constructed here a wharf on the south side of the river.
20 feet long, 20 feet wide on top and 12 feet high at the outer end, where
20 feet by 20 feet has been added; it is built of round-log, stone-filled
batter of 1 in 12 on all faces. This work being much out of repair, the
was granted by parliament at its session of 1902, to not only repair but
s wharf a further distance of 25 feet, the extension to be 42 feet wide
have a height at the outer end of about 14 feet. The repairs and exten-
or were commenced in the fall of 1902 and completed in the spring of
cost of $1,066.13, the work being most substantially and cheaply con-
labour.

TIVERTON.

Digby county, is a village of some 400 people mostly engaged in fishing
some little farming, situated on the west side of Petit Passage, separat-
nd of Digby Neck from Long Island. It is about 30 miles south-west
, and 10 miles from Sandy Cove.
ry 12, 1903, a contract (No. 4,543) was entered into with Messrs. Hayden
gby, for the construction of a breakwater to afford shelter to the fishing
, when completed, will be 281 feet long, 30 feet wide on top, and at the
et high, where at high water ordinary spring tides there will be about 29
he whole work will be substantially built of round-log cribwork, the lower
5 feet above low water ordinary spring tides is of creosoted timber, to
ks of the limnoria.
es rise 21 feet.
e 30, 1903, the amount paid was $2,518.16.

TRACADIE.

arbour, Antigonish county, is on the southern shore of St. George's bay,
om the entrance into Antigonish harbour, and 11 miles to the westward
ern entrance to the Strait of Canso. It is separated from the bay by a
s and connecting beaches of sand and gravel, and its entrance was for-
stward of Delorey island, by a narrow and crooked channel with 2 feet
but in 1863 the provincial government opened a passage, by dredging,
nd of the harbour, through a beach which connected the mainland with
and constructed a breakwater on its eastern side.
74-5 the department repaired and extended the breakwater, and con-
ning wall of cribwork to the southward of it, to prevent erosion of the
epairs were made from time to time up to 1884-5, when the breakwater
nd strengthened by close-piling, and the retaining wall, which had been
reconstructed.
water, weakened by the ravages of the toredo, was badly damaged in
e following year the whole of it, excepting a portion of the south face,
th, was destroyed. During 1892-3 50 feet of the south face of the re-
n was repaired and strengthened by close-piling.
action, in 1890, of the greater portion of the breakwater involved the
channel at the entrance (originally carrying 6 feet at low water) 500
tward, and the wasting away of the beach, and consequent loss of land
by erosion.
further loss of land, and to improve and protect the entrance, during
he remaining portion of the old breakwater was repaired and strength-

ened, and a side extension 100 feet in length, consisting of round-timber cribwork, with creosoted timber substructure, and close-sheathed on the seaward faces, was constructed.

During 1901-2-3 the retaining wall was reballasted, and a cribwork 'spur,' 40 feet long and 16 feet wide on top, close-sheathed on all outer faces, was built at its southern end to deflect the tidal currents off the bank into the channel.

The sum of $381.64 was expended during the last fiscal year in raising, ballasting and covering of 52 feet of the shore end of the breakwater, in covering the retaining wall, 187 feet long and 10 feet wide with spruce poles, and in sheathing the outer face of the retaining wall for a distance of 30 feet from its junction with the 'spur.'

The reconstruction of the breakwater has had the effect of restoring the beach to the eastward nearly to its original condition, and to deepen the channel at the entrance.

The total expenditure to June 30, 1903, including $1,228.69 refunded to provincial government, and dredging, is $24,939.67.

TUSKET.

Tusket, Yarmouth county, is a prosperous village of some 400 people, at the head of navigation of the Tusket river, about 4 miles from the sea, situated 9 miles east of the town of Yarmouth. The principal industry of the place is lumbering, but there is also considerable farming done, and some fishing.

In 1902-3 the sum of $580.08 was expended in constructing a small wharf alongside the public road for the purpose of landing sea manure, cordwood, fish, &c. The work consists of a rubble stone block, 35 feet long, 30 feet wide, and from 9 to 11 feet high, built on the outside with large well-shaped stone, laid up dry, with a batter on the three exterior faces of 1 in 12. The interior is filled with rubble stone of all sizes. The wharf is topped with gravel, fendered at intervals of 8 feet, and furnished with guard-timbers bolted to the top stones round three sides.

VICTORIA.

Victoria Harbour, King's county, is situated at the mouth of Church Vault Brook, on the south shore of the Bay of Fundy, 52 miles north-west of Digby Gut, and half way between Morden and Ogilve's Wharf, from each of which it is distant about four miles.

The breakwater, which also serves as a landing and loading pier, was begun in 1864 and finished in 1867, at the joint expense of the inhabitants and the provincial government. It is 243 feet long, 27½ feet wide at the outer end, 23 feet wide at its inner end, and 24 feet in height at its outer end.

In 1878 the work was repaired and raised 4 feet. Slight repairs were made in 1891 and in 1893.

In 1900-1 the sum of $398.81 was expended in renewing 88 feet in length of the crib breastwork, forming the eastern side of the road approach. The new work is from 6 to 10 feet high, from 10 to 15 feet wide, strongly built of round log cribwork, well fendered and fully ballasted. A portion of the flooring of the shore end of the breakwater was also renewed.

In 1902-3 the sum of $653.53 was expended in refilling with solid cribwork a breach in the shore end of the breakwater that had been made by heavy seas in the spring of 1901. The new patch is 30 feet long, about 18 feet wide and 14 feet high.

Spring tides rise 36 feet.

The total expenditure to June 30, 1903, is $2,677.32, including a refund to the provincial government of $450 in 1887-88.

This work was transferred to the control of the Department of Marine and Fisheries on June 12, 1888.

WASHABUCK CENTRE.

uck, Victoria county, is a district on the south side of the eastern end of s channel, an arm of the Bras d'Or lakes, and extends about 6 miles along Washabuck Centre is situated near the centre of the district.

r to facilitate the shipment of agricultural produce and cattle from the e sum of $5,500 was voted for expenditure during 1902-3 on a wharf at Centre, and on April 6, 1903 a contract in the sum of $5,860 was entered construction.

rk under contract consists of a block and span wharf, 218 feet in length and e, with an L at the outer end, 20 by 20 feet; and of a road to connect the the public road, 102 feet long and 20 feet wide, fenced on each side. The o be of round timber, laid open-faced with creosoted timber substructures, outer blocks protected by close-sheathing on their outer faces.

oth of the water at the outer end will be 12 feet at low lake level, which rises ches.

end of the fiscal year preparations were being made to commence the work. n of $182.92 was expended in calling for tenders, &c.

WEDGE POINT.

Point, Yarmouth county, is the southern extremity of the peninsula called dge,' 3 miles long, north and south, by half a mile to a mile wide, east and ed some 10 miles south-east from Yarmouth, the county town. The popu- e peninsula comprises some 500 people, the majority being engaged in, and dependent upon, the fisheries. On the east side of the peninsula there was r protection whatever for the fishermen, of whom there are a considerable l they were obliged to keep their boats in Goose bay, on the western side. -3 the sum of $1,000 was expended in commencing the construction of a The work so far completed is 119 feet long, 19 feet wide and from 5 to ; it is substantially built of round-log cribwork, well fendered and ballasted eathed on the seaward side.

WEST BACCARO.

accaro, Shelburne county, is about 3 miles west of the village of Port La as a population of about 400, mostly engaged in the fishing industry. It e roughest spots on the south-east coast of Nova Scotia, and in the past n have pursued a very hazardous calling, and have been handicapped by the fe mooring harbour for their boats, often having to stand on the shore and boats and other property being destroyed by the storm. To lessen the heir calling and obviate further losses, the conversion of a pond, in part low tide, into a boat harbour was commenced in May, 1903, by construct- tion wall around it on its exposed sides and excavating a channel on the o be protected so as to prevent its filling in again. Total expenditure in- 902-3 in carrying on this work, $1999.99. The total estimated cost of this ork is $5,500, and it is believed an additional outlay of $3,500 will suffice it in 1903-4.

WEST BAY (SOUTH).

ay (south), Richmond county, is situated on the south side of West Bay, estern arm of the Great Bras d'Or lake.

oints,' so called from the number of headlands projecting into the south t bay, is a scattered settlement, extending along the shore for a distance of

4 miles, and the centre of the settlement is about 12 miles eastwardly from West Bay port,, at the head of West bay, and 15 miles northerly from St. Peter's Canal.

The sum of $2,000 was voted for expenditure during 1902-3 on a wharf on the south side of West Bay, and the site selected for it is at 'The Points,' inside of Pringle island.

A plan and specification for a pile-wharf, 250 feet in length and 20 feet wide, extending to 12 feet of water at low water, were submitted in January, 1903, and tenders for its construction were called for on February 13 following, but up to the end of the fiscal year 1902-3 the contract had not been signed.

The expenditure incurred in calling for tenders, printing, &c., was $134.26.

WESTERN HEAD.

Western Head, Queen's county, is a fishing settlement on the south side of Liverpool bay, about 4 miles south of Liverpool town. In 1887 the department began the construction of a stone breakwater here, and during the following year completed the same. The breakwater was constructed entirely of large stone, quarried for the purpose; the portion of the work, from low water mark upwards being built of selected stone firmly bolted together with iron dogs. The whole work originally constructed was 190 feet long and 40 feet wide on top. Soon after the breakwater was completed, 100 feet at the outer end of the work was destroyed, and in the following year, 1889-90, the sum of $5,000 was spent in rebuilding it. The projecting points of the reef were cut away, and a bed prepared for a foundation course, which was seated on bed rock, and the interstices were filled in with Portland cement concrete. Each succeeding course was laid in a similar manner. The top of the breakwater for 5 feet above high water and the surface were finished smooth. The total length of the work built during this year was 106 feet, so that on June 30, 1890, the breakwater was 196 feet in length. During the year 1898-9 the sum of $965 was expended in repairing this work. The older portion of the breakwater, 90 feet in length, 29 feet wide and with an average height of 8 feet, was practically rebuilt, and also material repairs were made to the newer work built in 1889-90. During the fiscal year 1902-3 the sum of $2,958.55 was applied in adding two blocks, each 25 feet long, 30 feet wide and 10 feet high, to the breakwater, and building about two-thirds of a third block of the same dimensions, which it was expected would be completed about October 1, 1903.

WHITE HAVEN.

White Haven, Guysboro' county, one of the finest harbours in Nova Scotia, is on the south or Atlantic coast, 14 miles to the westward of Cape Canso.

In 1854 the residents, with some aid from the provincial government, undertook the construction of a canal for boats through a low and narrow isthmus between Marshall cove, 3 miles within the entrance, and Witch cove, at the eastern extremity of Tor bay. On the completion of improvements made in 1876, it was 620 feet in length and from 10 to 12 feet in width; the bottom was about 1 foot above extreme low water, or 4 feet 6 inches below the level of extreme high water. Prior to 1884 the walls had become dilapidated, the southern entrance was blocked with sand, and the channel inside filled with sediment and washing from the slopes.

In 1894-95 repairs and improvements were made by the department, with the object of obtaining ultimately a uniform depth at extreme low water of 1 foot, and a width between retaining walls of 12 feet. The repairs and improvements effected included the removal of 160 feet of old retaining wall on each side at the south end, and the construction of walls 10 feet wide on top, of which 20 feet at the outer end on each side are of cribwork, and the remaining walls 140 feet of brush and stonework; temporary repairs to the retaining walls on both sides from 160 to 270 feet from the south end, and on the east side from 328 feet to 480 feet from the south end; the con-

PER No. 19

w walls on either side from 480 to 500 feet from the south end as founda-
e abutments, built by the municipality; the reconstruction of 100 feet of
st side (500 feet to 600 feet from the south end); the construction of 141
ary wall on either side (600 to 741 feet from the south end), and deepen-
to end to within 3 to 6 inches of extreme low water.
and 1901-2 the sum of $2,686.53 was expended in continuing the repairs
ents undertaken in 1894-5. The work performed comprised the construc-
et of brush and stone retaining wall on each side, 160 to 297 feet from
; the removal of the old retaining wall on the west side 328 to 740 feet
n end; and on the east side 588 to 740 feet from the south end; the con-
new retaining wall 583 feet in length on each side (167 to 750 feet from
and deepening between the retaining walls to about 1 foot at low water.
e fiscal year 1902-3 the sum of $799.25 was expended in constructing 80
and stonework on each side (750 to 830 feet from the south end) and in
e work undertaken, with the exception of the cribwork retaining wall 20
on each side at the north end.
expenditure to June 30, 1903, including a refund of $876.42 to the pro-
ment, is $5,817.23.

WHITEWATER.

er, King's county, is a small farming and lumbering settlement of 200
situated on the west coast of Minas Basin, about three-quarters of a mile
Blomidon, and 10 miles north-east of the village of Canning. In 1897-98
t built a public wharf at a cost of $3,999.08 by day's labour. It is 285
eet wide, with an ell at the outer end 35 feet long, where at high water
g tides there is a depth of 17 feet of water. The wharf is constructed of
n work, the blocks being solid cribwork, 19 feet long in the stem of the
ns being 14 feet in clear opening. The work is in good condition. Spring
eet, neaps 34 feet.
al year 1901-2 the sum of $249.95 was expended in building a block of
et long, 10 feet wide and 12 feet high, on the northern side of the shore
rk to replace an ancient and dilapidated block that retained the bank
pproach.
the sum of $881.98 was expended in filling the two outer spans of the
n wharf with solid cribwork to full height and half width: *i.e.*, 11 feet
et high, and constructing a small block about 10 feet square and 10 feet
re end, to act as a retaining wall for the approach. Total expenditure to
$5,131.01.

WHYCOCOMAGH.

nagh, Inverness county, is a village on the northern side of a bay of the
the head of St Patrick's channel, an arm of the Bras d'Or lake.
wharf at this place was purchased, together with a warehouse and a right
public road in 1897-98, and repaired and extended during the years 1898-
28 feet in length, including 144 feet of stonework 21 feet wide, and 84
k (25 feet in width over 59 feet of its length and 60 feet in width over the
built over the remains of an old block and span structure. The depth,
nd, is 12½ feet at low, or 13½ feet at high lake level.
e fiscal year 1902-3 the sum of $450 was expended in repairing the sides
e outer 50 feet of the approach, and in blocking up and repairing the floor
use.

YARMOUTH BAR.

Yarmouth, the county town of Yarmouth county, is situated at the south-western extremity of Nova Scotia. It is a thriving and prosperous town of nearly 7,000 inhabitants, and, next to Halifax, the largest and most important in Nova Scotia. It is also the terminus of the Dominion Atlantic Railway, whose fine Clyde-built steamers make regular trips throughout the year to Boston. There are several important manufactories in the place, but the leading business is shipping, of which a larger tonnage is owned here than in almost any locality in Canada.

At low water Yarmouth harbour—in which spring tides rise 16, neaps 13 feet—consists largely of mud flats covered with eel grass. The harbour is formed by a succession of shingle or gravel beaches (called Stanwood beaches), aggregating about 1 mile in length, which connect the northern end of Cape Fourchu island, also about a mile long, with the southern end of Stony Point, on the mainland, and separate the harbour from the Bay of Fundy.

In 1867 it was found that part of the beach between Cape Fourchu and Stony Point was gradually wearing down, and unless this action was arrested the sea would eventually sweep away the beach and destroy the harbour. The Government of Nova Scotia began the work of protecting the beach in 1867, by constructing 200 feet of cribwork at Stony Point. Between 1873 and 1875 the Public Works Department constructed the remaining 2,800 feet of protection work required to reach Cape Fourchu, and added buttresses or groynes to stop the movement of the gravel.

Between 1875 and 1888 the protection works, though substantially built of stone-filled cribwork and close piles on their seaward faces, had to be repaired and strengthened, the expense amounting to over $25,000.

Between 1888 and 1896 no further works of repair were undertaken on the beach protection, and it became dilapidated and decayed. Breaches were made through it by the sea in various places. During the year 1896-7 the sum of $2,983.62 was expended in carrying on the most urgent works of repair, and in 1897-8 a further sum of $3,234.51 was expended in continuing and completing these repairs. This last sum was applied in rebuilding a length of 50 feet at the eastern end of the protection work, and in constructing a groyne, projecting at right angles from the same end, for a distance of 175 feet. The groyne is 25 feet wide and 11 feet high, substantially built of round-log stone-filled crib work. Its object was to protect the beach at the north-eastern end of the main cribwork protection, by accumulating the gravel and breaking up the waves before they expended their force on the beach. It has admirably fulfilled its purpose, as gravel has accumulated at the junction of the groyne with the main work to a depth of over 14 feet.

In 1898-9 the sum of $300 was expended in repairing a small but serious breach, 25 feet long, in the bottom of the outer face of the beach protection work, and in covering with 3-inch hemlock plank a length of 430 feet of the top of the work, in order to prevent the ballast from being washed out by the waves.

In 1899-1900 the sum of $970.27 was expended in repairing two or three small but dangerous breaches in the seaward face of the work, and in covering the top for a length of about 670 feet with 3-inch plank to prevent the sea from washing out ballast.

In 1900-1 the sum of $3,389.70 was expended in extensions and repairs, the individual expenditures of the work done being as follows:—

(*a*) $142.43 was expended in repairing and filling with ballast a length of 60 feet of the older portion of the work.

(*b*) $2,798.50 in extending the work 514 feet westerly; this new length is 8 feet wide, from 5 to 8 feet high, substantially built of round-log cribwork, sheathed on the seaward side, and covered on top with round spars, well spiked on.

(*c*) $448.77 in rebuilding a length of 50 feet of the older portion of the work near its eastern end, which was severely damaged by a heavy sea on November 9-10, 1900.

APER No. 19

the sum of $120.94 was expended in a few petty and miscellaneous beach protection work, the work done comprising the replacing of a few -sheathing, washed off by winter seas, the renewal of some flooring, and of loose portions.

les rise about 15 feet, neaps 12 feet.

PRINCE EDWARD ISLAND.

AITKEN'S SHORE PIER.

Shore pier, King's county, is on the south side of the Montague river, getown. The pier was in former years quite an important place of ship- used as landing for the ferry steamer plying between Georgetown and ue, since, however, the construction (about 20 years ago) of the new ferry mile east and lower down the river, and a private wharf a short distance pier was not kept in repair and latterly had become a complete wreck, r shipments. The great need of proper shipping and landing facilities in aving been represented to the Dominion government by the residents of ng districts, the old pier was taken over from the local government and ade an appropriation of $3,200 at the session of 1902 for the works of required to place the pier in serviceable condition. Materials were got e winter of 1902-3 and construction began early in May. By June 30, of the fiscal year, a length of 167 feet of the shore end of the pier, 22½ feet n rebuilt the full height, and an adjoining length of 80 feet, also 22½ feet n one foot of the top. On the outer 113 feet, where the width is 30 feet of the work to be rebuilt, the inner 40 feet in length was built up to of the top. The pier when finished will be in all 360 feet long, extending of 7½ feet at low water or of 12½ feet at high water spring tides that here At the bottom the structure is formed of poles close laid lengthwise and ich are ballasted at intervals through pockets formed for the purpose. on, from 3 to 4 feet in height, consists of walls of squared timber secured als and cross-ties, the space thus enclosed being filled with ballast, on top adway is formed of broken stone and gravel; the sides and end of the er-piled at 5 feet centres. The expenditure incurred up to the end of ounted to $2,163.99, which covers the cost of much material ready for use

BAY FORTUNE.

une harbour, King's county, is situated on the south side of Rollo bay, on of the island, and about 5 miles south-west of Souris, the eastern terminus Edward Island railway.

ve the channel leading to the wharfs, situated on either side of the Bay , the provincial government, some years ago, built a breakwater on the o as to contract the channel and increase the scour, thus to deepen the e bar obstructing the entrance. During 1892-93-94 the department ex- eakwater, placed the inner part in good repair and connected the work f at the point of the bar by a beach protection composed of brush, stone prevent the formation of a false channel. The breakwater has now in all 50 feet and a width of from 12 to 20 feet; much benefit is said to have its extension, the depth of water over the bar being now two feet better

During the summer of 1902 and the following spring, the sum of $999.84 was expended in general repairs undertaken to make good the damage resulting from settlement, the work done consisted in the levelling of the channel face of the breakwater by putting on an extra timber secured by cross-ties, &c., driving piles along this face at 10 feet centres, and filling in fully the work with brush and stone.

BRAE.

Brae Harbour, Prince county, is situated at the mouth of the Brae river, on the northern side of Egmont bay, 8 miles east of West Point, and about 6 miles south of 'Coleman Station' on the line of the Prince Edward Island railway, which station is 36 miles from Summerside, the shire town of the county. At the mouth of the river, an area carrying a depth of about 6 feet of water, is well sheltered by Brae island, and would prove a good fishing station and harbour of refuge for small vessels, as well as a most convenient place for shipments, were it not that the approach to it is obstructed by a sand bar, almost dry at low water, that extends completely across the entrance which is parallel with the shore, and at a distance of about a quarter of a mile. In 1890 the inhabitants of the surrounding district, with a view of improving the approach to the harbour, began the construction of a breakwater for the purpose of contracting the entrance and thus causing an increased scour that would deepen the water. They built a work 350 feet long composed of brush, poles, and some stone ballast, finished with clay filling on top, to this the department, in 1892, added a length of 200 feet of similar work, and in 1895 repaired or more properly rebuilt the original work constructed by the inhabitants that was of weak and poor construction. In 1898-99 a further addition of 100 feet was made to the breakwater, which is now in all about 650 feet in length. While the work affords a good and safe shelter for boats and landing shipping accommodation for small vessels, it has but little improved the entrance over the outer bar, to do which it needs to be further extended.

During the fiscal year 1902-03 the sum of $388.25 has been expended in repairing and strengthening portions of the existing work that had been damaged by high storm tides, the action of the ice and settlement. The work done comprises repairs to the roadway with gravel and broken stone, the close fender-piling of 60 feet in length inward of the outer 100 feet, on the south or seaward side; fender-piling parts of the inner work on both sides, and putting in new cross ties, where necessary and possible, so as to keep the breakwater in good condition by preventing the further spreading of the top timbers.

CAMPBELL'S COVE.

Campbell's Cove, King's county, is on the north side of the island, about 9 miles from East Point and 14 miles north-east from Souris, the eastern terminus of the Prince Edward Island railway. The place was, in 1872, selected by the provincial government for the construction of a small breakwater, 300 feet long and 30 feet wide, on the reef that extends from the west side of the cove, its inner end being 70 feet beyond high water mark. Much benefit being derived from the work, both by the fishing and farming industries of the district, the Dominion government took over this breakwater when Prince Edward Island entered Confederation. In 1882-3 necessary repairs were made and the work was extended 250 feet seaward and a gap of 70 feet between its inner end and the shore filled in, making the work in all 620 feet in length. This breakwater sheltered a small area carrying a depth of about 4 feet of water at low tides or 8 feet at high water springs, which rise here about 4 feet. The old breakwater continued in good condition up to 1899, when some slight repairs were required; after that date, however, owing principally to the ravages of the teredo, each storm caused more or less damage to the cribwork, and notwithstanding the extensive repairs made in 1895 the work continued to suffer each fall and winter. In 1899 a

of the original work was completely carried away, and an adjoining so badly injured as to require reconstruction. This latter damage was 00-01, and the outer part of the work, destroyed in 1896, was rebuilt During the fiscal year 1902-3 the sum of $799.24 was expended in ning the work by putting in new ballast where settlement had occur- piling several portions of the seaward face and fender piling this face e at 10 feet centres; the whole work being as far as possible placed in

CANOE COVE.

, Queen's county, is situated on the south coast of Prince Edward nt by water about 18 miles from Charlottetown, and about 10 miles There is fairly good shelter at the place for boats from winds from st, some protection being afforded by a reef on the east side of the ver, exposed from the south to the south-west. The construction of a commenced about the middle of April, 1901, the work being done by a foreman. At the close of the fiscal year 1901-2 a length of 100 feet n completed and the bottom portion of an additional length of 100 eady for placing. In 1902-3 this block was placed in position at the 100 feet block then completed, and the superstructure was carried up of the height required, the whole at an expense of $3,172.39.

hich is being built is isolated, its inner end being about 500 feet from eastern side of the cove, and it runs nearly due west out to a depth of of water at ordinary low water, or of from 12 to 13 feet at high water the bottom its width is about 32 feet, and up to about 1 foot above he inner and outer sides have a batter of 1 in 12; on the inner side is continued to the top, but the outer or seaward side has a slope of 1 oping face is sheathed with 4-inch hardwood plank; the top of the h stands 55 feet above high water ordinary spring tides, and has a is to be covered with 4-inch planking.

CASCUMPEC HARBOUR AND BAY.

arbour and bay, Prince county, are on the northern coast of the island, ng about 18 miles south of Cape North, and 20 miles south-westerly e of Richmond bay. The harbour and bay are connected by what is mpec Narrows,' a shallow stretch of water from ½ to 1 mile in width, e sand dunes and sand bars that extend nearly parallel with the shore ween the entrance of the two harbours or bays. Cascumpec harbour is extent, with a good depth of water and perfectly sheltered from all h used as a harbour of refuge by coasters and fishermen. At its head wn of Alberton, the second in importance in the county, and a station lward Island railway, which has a branch to a deep-water wharf, with house, &c., on the harbour, from where extensive traffic is carried on f shipment. Like all the harbours on the northern coast of the island, oach is obstructed by an outlying shifting sand bar, that lies about a ntrance between the beaches, and on which is usually found at best low water; this depth is sometimes reduced owing, it is said, to ve occurred in the sand beaches; these breaches are openings known ' and 'Goose harbour,' situated about 2 and 3 miles east of the en- Latterly a further break occurred in the beach about a mile east of the to the harbour being feared, it was decided to close in this break. er and spring of 1903 a structure 450 feet in length was built, of brush le at bottom, with a superstructure of cribwork fully ballasted, fender

piled, &c., at a cost of $1,904.76. The opening was completely closed, but another break of 90 feet in width has occurred in the beach at the northern end of the structure. It appears to be doubtful that permanent closing of the breach is possible, unless very extensive works of protection be built.

CHAPEL PIER.

Chapel pier, King's county, is on the south side of Grand river, about 3 miles from its entrance into Boughton bay, and 9 miles from Cardigan station, on the line of the Prince Edward Island Railway. The pier, constructed by the local government previous to Confederation, was assumed by the Dominion government in 1884; it consisted at the time of a shore abutment or approach 205 feet long, with a block and span at the outer end forming a total length of 249 feet, 22 feet wide, which carried at its outer end a depth of 7 feet at low water or 12 feet at high water spring tides. During 1889-90 a length of 44 feet was added by the reconstruction of a former block and span, extending the work into a depth of 9 feet at low water. Owing to the destructive action of the teredo, that had destroyed nearly all of the lower portions of the fender piling, and the ice that formed each winter in the openings between the blocks having the effect of forcing them outward, it was deemed advisable to fill in the openings solidly, which was done during the fiscal year 1902-3, with close laid poles, &c. The outer block was close pile fendered, the top of the shore abutment was rebuilt and fendered at 10 feet centres; the roadway was rebuilt with broken stone, and general repairs made where required, at a total cost of $1,099.25.

CRANBERRY HEAD.

Cranberry wharf, Queen's county, is situated on the south side of the East or Hillsborough river, about 14 miles from Charlottetown. Originally built by the provincial government many years before Confederation, the wharf at this place came under the control of the Dominion government in 1898, when the sum of $2,075.35 was paid to the local government as a reimbursement for the expenditures made to repair the structure after 1873. When its control was assumed the wharf was in very bad condition, owing to age, and had latterly become unserviceable. The sides of the shore abutment being decayed, had fallen down, and the span connecting the outer block had been carried away; the top of the outer block or pier head being also decayed was much damaged by running ice. Repairs and reconstruction of the whole structure were effected during the fiscal year 1902-3 at a cost of $1,126.77. The work done consisted in rebuilding the top portion of the pier for an average height of 6 feet, close-piling around the outer block, replacing the span beams and covering, planking over the outer block, renewing the roadway on the shore abutment with stone and gravel, and fender piling its faces at 10-feet centres.

COVE HEAD BAY.

Cove Head bay, Queen's county, is situated on the north side of the island, about midway between Tracadie and Rustico harbours, or at a distance respectively of 5 and 6 miles. Within its entrance, which at low water is about 250 feet wide, the bay is about 4 miles in length and from ½ a mile to a mile in width, it receives the waters of the Black river, and of Mill, Auld's and McCallum's creeks. It is navigable over most of its extent for small vessels, the depth on the outer bar, however, is only 3½ feet at low water, or 7½ feet at high water spring tides.

The harbour proper commences immediately inward of the entrance and extends westward between the sand beach and what was an extensive sand flat, dry at about half-tide. Formerly the main channel into the bay was on the western side of the sand flat; it had a width of from 300 to 400 feet, with a depth of 5 feet and over at low

mall channel that existed on the east side of the flat was shoal and narrow. e years two other channels have opened up through the sand flat, resulting n channel becoming nearly closed. In order to improve this condition, a as entered into on March 12, 1903, for the construction of a shear dam 1,575 extending in a north-westerly direction from the south-eastern side of the mpletely closing two of the channels. The shear dam consists of cribwork, e and piles. Work was commenced early in May, and by June 30 the bottom to about the height of ordinary high tide, had been built over a length of nd the greater part of the materials required had been delivered. The ex- was $1,289.40.

GEORGETOWN.

etown, the shire town of King's county, is the terminus of the Georgetown the Prince Edward Island Railway. The pier at this place is one of the ward Island piers, control of which was assumed by the Dominion govern- 883-4, before the damage it received during the storm and tidal wave of , 1900, and the succeeding storms of that fall and winter; had in all a length , with a width of from 30 to 36 feet; along the sides of its outer 300 feet a 2 feet at low water, or of 17 feet at high water spring tides was found. The ment, or appproach, is 340 feet long, constructed of close-faced timber work, ith brush, stone and clay on top, forming the roadway, while the outer part six blocks spanned by stringers covered with planks. During the storm in 1900 the four outer blocks and connecting spans were carried away, while ner blocks and west side of the shore abutment were greatly damaged, the tion of the two inner blocks and repair of the shore abutment were effected fiscal year 1902-3, at a cost of $4,405.26.

GRAHAM'S POND.

m's Pond, King's county, is situated on the east coast of the island, about 5 the entrance to Cardigan bay, and about the same distance north of Murray

ond has a length of about half a mile on a width of from 600 to 800 feet. n the body of the pond and a short distance from the entrance, a depth of 3 ordinary pond level, which is usually from 1½ to 2 feet higher than ordinary or 3 or 3½ feet below high water spring tides, that here rise about 5 feet.

g 1900 the Department of Marine and Fisheries cut a new channel into the der to make it possible for boats to enter at all times of the tide, but the new in again nearly to its original state during the following fall and spring Under instructions of the department, in the fall of 1901, the cut made by e and Fisheries department was cleared out and a protection of brush and built, and proved most effective, keeping the channel in the desired course, as ing some shelter for boats.

e urgent desire of the residents of the district a further expenditure of $500 at the place during the fiscal year 1902-3. The brush protection works on side of the new channel that had a length of 90 feet, was extended 100 feet nd a length of 150 feet of protection work built on the north side.

HICKEY'S WHARF.

y's Wharf, Queen's county, is situated on the southern side of the East or gh river, about 10 miles from Charlottetown; it was constructed by the local t many years before Confederation, and is one of the Prince Edawrd Island ontrol of which was assumed by the Dominion government in 1884; the work

is 428 feet long, the inner end, for a length of 248 feet, is 22 feet wide, and the remaining portion, 180 feet long, is 28 feet wide and forms the chief loading place for vessels, where some dredging was done in 1881-82 giving a depth of about 10 feet at low water, or of 19 feet at high water spring tides. When the wharf was taken over by the Dominion government it was in a most dilapidated condition and has, at different times since, been repaired to keep it in passable condition for traffic. During the fiscal year 1902-03 the sum of $253.12 was expended in putting in 9 new span beams, repairing the planking, putting in new mooring posts, guard timbers, fender piling, &c.

MIMINIGASH HARBOUR.

Miminigash Harbour, Prince county, is situated on the north-west coast of the island, about 15 miles from North Cape and 18 miles from West Point. Before its improvement by the department, it was one of the numerous ponds along the coast that empty into the Gulf of St. Lawrence, by numerous channels through sandy beaches; these channels constantly change their positions, and during severe storms are, at times, completely blocked up. The entrance to Miminigash Pond, however, being sheltered to a great extent by 'Miminigash Reef,' a ledge of rock nearly a mile long, lying parallel to the shore and about half a mile distant, has the advantage over the other ponds on the coast, and is the one generally used by the fishermen during stormy weather for shelter. After an examination of different sites proposed, Miminigash was selected by the department for the formation of a harbour; with this object in view, work was commenced in 1878, and now consists of breakwaters or piers on either side of the entrance, placed 56 feet apart, confining the channel and keeping it in permanent position. The breakwater on the north side is 550 feet long, and that on the south side 350 feet, inward of both there are beach protection works so as to guard against new channels forming at the back of the breakwaters. These protection works are of cribwork, solidly filled with brush, poles and stone. The one on the south side is 270 feet long, and on the north side 350 feet. During the fiscal year 1902-03 the sum of $501.76 has been expended in strengthening the different works at this place, repairs were made to the planking of the north breakwater, and the outer face of the south breakwater was close-piled, the ballast that had been washed out was replaced, and the beach protection work repaired where found necessary.

A portion of the channel was also deepened on a length of 95 feet, 10 feet wide and 8 feet deep, at a cost of $181.26.

MORRISON'S BEACH.

Morrison's Beach, King's county, is on the south side of the entrance of Grand river into Boughton bay, its north end being opposite Annandale pier, where the width of the river is about 1,200 feet. The beach, which extends in a northerly direction, has a length of about 4,230 feet and a width of from 200 to 600 feet at ordinary high water, or of from 600 to 2,000 feet at low water spring tides. At one time it is said protection works of brush, stone and poles extended the full length of the beach, but were destroyed some 25 years ago by a storm that then occurred, a part of the work was reconstructed some 15 years ago, but this as well was shortly destroyed or rendered useless for the purpose intended, viz.: to form a roadway available for traffic at all times of the tide to 'Morrison's Beach,' where there was a shipping place for produce, the high parts of the beach being usually covered with drift materials, while the lower parts, at and near high water, were so covered with water as to be impassable. During 1901-02 brush hurdles were constructed along the centre of the beach on a distance of 3,500 feet, for the purpose of arresting and accumulating the drifting sand, and prevent the high storm tides passing over it, this result to a great extent was obtained. During the fiscal year 1902-03 all of the damaged parts of the work have been rebuilt and other parts strengthened at a cost of $399.60.

PAPER No. 19

NEW LONDON HARBOUR.

ndon Harbour, Queen's county, is on the northern coast of the island, about from the entrance into Richmond bay. The entrance of the harbour has out 1,200 feet, it is about 3 miles long and nearly as wide; it receives the e Hope, the South-west, the Stanley and the French rivers, all of which e for short distances and have wharf accommodation from which an export rge quantities of farm produce; the districts surrounding the harbour are ed and very productive The harbour is largely used as a fishing station of refuge, for which it is most conveniently situated, the fishing grounds ty are considered the best on the Gulf of St. Lawrence. For the improve- entrance, which is obstructed by a shifting sand bar, works were begun by nt in 1878, these now consist of breakwaters or beach protection works on at on the eastern side has a length of 1,120 feet, while the western one is ; the object of their construction being to extend and preserve the sand to so confine the current as to cause increased scour across the sand bar. btained has been most satisfactory, the depth of water in the harbour w water, and 12 feet over the bar, making this one of the best on the north island, since construction the western work has received no damage, the however, being exposed to a very strong tide, the action of running ice, and very heavy sea, requires, about yearly, some expenditure for its mainten- g the fiscal year 1902-03 the sum of $745.93 was expended iu rebuilding a feet, and in repairs to a further length of 200 feet, additional bolts were eathing of the outer block.

POWNAL.

Pier, Queen's county, is situated on the north-eastern shore of Hills- about 9 miles east from Charlottetown, it was built by the local govern- ears before Confederation, and is one of the Prince Edward Island piers, f which was assumed in 1884 by the Dominion government. The pier has h of 753 feet and consists of a shore abutment or approach 209 feet in et wide, and of 14 blocks with intervening spans. The inner blocks are 3 feet wide, while the outer ones, forming the pier-head, have a width of 40 lly there was little or no water at the end of this pier at low water, but in rder to enable small vessels to reach it at all times of the tide, and larger gh water, the department had a channel dredged on a length of 1,275 feet vide, to a depth of 6 feet at low water, from the end of the wharf to deep in 250 feet long and 90 feet in width was also dredged on the eastern uter end of the pier. Being a very old structure and much out of repair trol was assumed by the Dominion government, it has since, at different ed some repairs in order to keep it in good condition for traffic; all the top decayed owing to age, the fender piling and other timbers, below and near re injured by the teredo. The structure was greatly damaged by the tidal rm in the fall of 1900, temporary repairs were made in the summer of 1901 ler the pier available for shipment, and during the winter and spring of ls costing $673.58 were got for the repairs and reconstruction required. the fiscal year 1902-03 the sum of $954.64 was expended for repairs, the been completed at the end of the fiscal year.

RED POINT.

nt pier, Queen's county, is situated on the eastern side of the East or Hills- r, about 7 miles north-easterly from Charlottetown. This pier was con- y years ago by the local government; it has a total length of 650 feet,

averaging 21 feet in width, it is composed of a shore abutment 310 feet long and 5 separate 'blocks' and intervening 'spans'; the blocks are from 29 to 75 feet in length, and the spans from 21 to 25 feet, the whole of the work is built of close-faced timber, filled in with brush and stones, clay filling forms the roadway on the blocks, excepting the outer one which, with the spans are floor stringered and covered with 3-inch planking.

Originally, the outer end of the pier was dry at low water. In 1890 the department had a channel dredged 12 feet deep at low water from the deep water of the river to its outer end, and for a distance of about 100 feet on each side. Being an old structure, an expenditure is required almost annually to keep it in passable condition. During the fiscal year 1902-03 the sum of $1,100.80 was expended in rebuilding a length of about 130 feet of the western side of the shore abutment, putting additional fender piles on the sides, renewing the span beams, guard timbers, covering, &c., and rebuilding the roadway with broken stone and gravel.

RUSTICO.

Grand or North Rustico Harbour, in the County of Queen's, is situated on the north side of the island, about midway between East point and North cape; it is one of the most important fishing stations on the island. In order to improve the entrance of the harbour, which is obstructed by a shifting sand bar, the department, in 1881-2-3, constructed works on each side, for the purpose of concentrating the current at ebb tide and directing it upon the outer bar, and improve the depth of water by scouring, the effect was that 2 feet more water is now found on the bar than formerly. The depth of water on the bar is at present 8 feet at low or 11 feet at high water spring tides. The breakwater on the northern side also protects the inner low beach, on which most of the fishing stages and fish houses are situated. Originally it was 1,240 feet long, but the timbers having been weakened by the action of the teredo, it suffered severely during various storms, 120 feet of the outer end being carried away and the adjoining 150 feet much injured, the repair and reconstruction of this part of the work were made during 1893-4-5, the outer 120 feet, however, not being rebuilt reduced the length to 1,120 feet. A head block, 30 by 62 feet, was, however, added and the adjoining 140 feet widened and otherwise strengthened. This part, and also the outer block, have a slope of 1 in 1 on the seaward side.

The sheathing of the slope having been damaged, and some of the ballast washed out, the sum of $108.26 was expended during the year 1902-3 in doing the necessary repairs.

SKINNER'S POND.

Skinner's Pond, Prince county, is on the north-west coast of the island, midway between Miminigash and North cape, being about 8 miles distant from each. It is about 3 miles from Harper's station, on the line of the Prince Edward Island railway. The pond, one of many of similar nature on the island, has a length of about 1 mile, and an average width of 500 feet, with a depth of 5 to 10 feet at ordinary pond level, which is about 4 feet higher than low water spring tides. Tht new channel made in the pond having proved unsatisfactory, the sum of $30 was expended during the fiscal year 1902-3 in removing a portion of the dam placed at the original outlet.

SOURIS HARBOUR.

Souris harbour, King's county, is situated on the southern side of the island, about 16 miles west from East Point. It is important as a harbour of refuge and place of shipment. A breakwater was built here by the Dominion government in 1877; it has a length of 1,250 feet, of different forms and construction, for a description of which

ded into three sections, viz.:—Inner section 290 feet long, and 30 feet close-faced timber with plumb sides, having on the seaward face a pro-e, sloping 3 to 1, in an average depth of 7 feet at low water. Middle t long, averaging 65 feet wide, also of squared timber built close-faced, 10 feet sloping 1 to 1 on the seaward face ; this section stands in an of 17 feet at low water, and has, during the past three summers, been slope formed on its outer or seaward side. The outer or third section ter is 390 feet long, and of close-faced timber, averaging 24 feet wide, the seaward side a stone protection slope extending to within 3 feet of ping 1 to 3. There is also a block 40 by 80 feet at the end of the work, close-faced creosoted timber fully ballasted, standing in a depth of 22 ter spring tides. During the fiscal year 1902-3 the sum of $19,680.12 n building the stone slope of the second section.

STEPHEN'S AND LAMBERT'S PIERS.

and Lambert's piers, King's county, are situated on the southern side ue river, immediately below the highway bridge at the village of Mon-ut 6 miles from where the river enters Cardigan bay. Lambert's pier of 310 feet on the river channel, and consists of two sections, the upper tion connects with the bridge, and is 140 feet long and 24 feet wide, rk on the inner side and pilework outside; the eastern section is entirely feet wide, capped, floor-stringered and planked over. Stephen's pier, diately below Lambert's, has a frontage on the river channel of 100 feet; wo wings or approches about 50 feet apart, extending out from the bank d being respectively 90 and 115 feet long; they are built of close-faced ce between them is now being filled with ballast discharged from vessels, of the river to the pier head that is formed of pile bents, floor-stringered er. During the year 1902-3 the sum of $299.45 was expended on general covering of the piers; some new floor-stringers were also put in on the

ST. MARY'S BAY.

Bay pier, King's county, is situated on the southern side of St. Mary's niles south of Georgetown. It was constructed originally by the local eing one of the Prince Edward Island piers, the control of which was e Dominion government in 1884. Since that date the approach to it has nproved, a channel from deep water and a basin at the outer end of the ged to a depth of 10 feet at low water ; loading berths 50 feet wide and were also dredged out on both sides of the pier. The pier is in all 407 inner 310 feet of this being 21 feet wide, and the outer 97 feet 28 feet lly it consisted of a shore abutment and seven blocks with intervening of these have been filled in, only the outer one remaining. During the the sum of $549.85 was expended in effecting some repairs, the work in rebuilding 3 feet in height at the end of the pier head on a length ing in new floor-stringers and covering, driving 21 fender piles, putting ooring posts, and rebuilding the roadway with broken stone and gravel.

ST. PETER'S BREAKWATER.

breakwater, King's county, is on the north coast of the island, about 35 n East Point, and on the west side of the entrance into St. Peter's bay; was constructed by the department in 1878 to improve the entrance er shelter for fishing boats. It has a length of 226 feet, built close-faced

solid timber work, fully ballasted, floor-stringered and planked over, and has its inner end connected with the sand hills or high ground by a beach protection or breastwork, 1,420 feet long, to prevent a channel being formed through the beach on its inner side. The outer end of the work having become damaged by the action of the teredo and running ice, for its temporary protection it was close-piled in 1899-1900. On September 26, 1902, a contract was entered into for the construction of an addition of 30 feet that will both give some further shelter as well as thoroughly secure the work. Materials were got out during the winter and construction was commenced in May. By the end of the fiscal year the block was about half completed and set in position. The expenditure was $1,108.81.

TIGNISH HARBOUR.

Tignish harbour, Prince county, is on the north or gulf coast of the island, about 6 miles southward from Cape North. The harbour is at the mouth of the Tignish river, which here enters the Gulf of St. Lawrence. On each side of the river's mouth the coast line for a long distance being quite straight, gales from the north-east to south-east throw in a very heavy sea, and this acting on the sand beaches frequently caused the entrance to become completely closed until it would be broken through on the occasion of a freshet or an unusually high tide. To keep the entrance open and to preserve the channel in one position, the Government of Prince Edward Island, in 1868, began the construction of works on each side of the river mouth, contracting this to a width of 40 feet. The effect was to increase the current and give a better depth of water. Since Confederation, the works having been assumed by the Dominion government, have been raised, repaired and extended. Beach protection works were built on each side, connecting the piers or breakwaters with the high ground so as to prevent the possibility of a channel forming at the back of either of them. During the past season the sum of $732.41 was expended in rebuilding a length of 100 feet of the channel face of the northern breakwater. New floor-stringers and covering were put on, additional fender-piles were driven on different parts of the works, and the beach protection on the northern side was levelled.

VICTORIA (CRAPAUD).

Victoria or Crapaud pier, Queen's county, is situated at the head of navigation in the Crapaud basin, at Victoria village, which is the most important place of shipment after Summerside on the south-western coast of the island. It is about midway between Charlottetown and Summerside harbours, and about 11 miles distant (south) from Emerald Junction on the line of the Prince Edward Island railway, and is the outlet of probably the most fertile and best tilled district on the island. At different times since Confederation the department has expended considerable sums in dredging to improve the approach from the deep water to the pier, and for repairs thereto. This pier has been under the control of the Dominion government since 1884-5. It has a total length of 486 feet, consisting of a shore abutment or approach 286 feet long, and 20 feet wide, a middle section 143 feet long, 37 feet wide, and a pier head 57 feet long and 58 wide its height is 19 feet at the outer end, where a depth of 9 feet is carried at low water. With the exception of the approach, which is built solid, the work is composed of alternate blocks and spans, floor-stringered and planked over. During the spring of 1902 the sum of $199.13 was expended on repairs of the first and second spans and intervening block, on all of which new floor-stringers and covering were put on, and general repair made of the roadway approach.

WOOD ISLANDS.

Wood islands, Queen's county, are situated about 30 miles south-east from Charlottetown, and 15 miles to the westward of Cape Bear, and are the most southerly part

PAPER No. 19

ward Island. Originally two small islands, they are now connected to- lso to the shore by sand beaches. A sand spit extends out from the shore 0 feet of what had been the eastern island, forming within it and the d and the connecting beaches a large shallow pond, having an area of es, the outlet from which is at the east end of the eastern island.

formation of a shipping place was commenced in 1859 by the provincial but as at no time were the works in good condition, little if any good n them until 1894, when the reconstruction of the northern breakwater by the department, and the southern one repaired. As this latter work, too short, an addition was built during the year 1901-2. Its present feet, and from 20 to 40 feet wide, while the northern work is 2,500 feet feet wide.

e extension of the southern work, the increased scour being in danger of ermining, the sum of $3,008.16 was expended during the fiscal year of e-piling the outer end and sides on a length of 200 feet, and putting in a ss with stone filling on the seaward face. This breakwater being used as ace, an approach to its inner end was constructed, having a length of 54 feet wide.

PROVINCE OF NEW BRUNSWICK.

ANDERSON'S HOLLOW.

n's Hollow (Albert county) is a cove of Salisbury bay, on the north-west hignecto channel, in the Bay of Fundy. Spring tides rise 40½ feet; neaps,

kwater wharf at this place was begun in 1879 by the construction of a de- 550 feet from the shore, with which it was afterwards connected. In , the work was 290 feet in length, and three years later was carried to the structure, 25 feet wide on top, was originally 27 feet high at the outer end, om having been raised by the accumulation of littoral drift, the height is et less. It is built of round timber cribwork, lightly battered on the inside, the rate of ¼ to 1 and sheathed on the weather face.

kwater was damaged by storm on November 21, 1895, when a small light- at the outer end was swept away, together with part of the break, while top work at the head was simultaneously shaken and started.

-96 a small sum was applied to bolting loosened timbers for temporary

the fiscal year 1896-97 the inside face of the wharf at the outer end, which a heavy list in the storm of the previous year, was taken down and rebuilt e of 75 feet on top and 44 feet on the bottom. The list was taken out, the ng carried to a height of 15 feet, in order to level the top, and new covering a length of 75 feet. Seventy feet out of 110 feet of dismantled break ructed, and fenders were placed on the inside of the new face.

99, by an expenditure of $121.31, 27 pieces of new sheathing were laid and sloping face, a new cap and face timbers were inserted, and the gap in the long, left unfinished at the time of the previous repairs, was built up with timber strengthened with knees.

-01 the break-timbers, which had been started up from 3 to 9 inches by distance of 290 feet, were restored to position. For 25 feet at the outer

end, the break was raised 1 tier; 8 bridles, 9 inches square, were placed between the knees of the break for a distance of 100 lineal feet; 3 new pieces of 6-inch sheathing were placed on the sloping face, and loose planks were secured with bolts. Through the shoal obstructing the work on the inside, a channel 300 feet long, 35 feet wide and 5 feet deep was made by means of a wheel scraper. It was found, however, that the shoal formed again rapidly with the recurrence of any south-west swell. A groyne, 50 feet in length, made of piling and 9-inch timber, was built on the outside of the work, in order to check for a time the accumulation of littoral drift on the inside.

During the year 1901-02 new sheathing, 6 inches thick and from 22 to 32 feet long, was laid and secured with ¾-inch bolts at different places along the weather face of the outermost 190 feet. Additional bolts were also driven to secure the old and loosened sheathing, while 71 pieces of new covering 6 inches thick, were placed on the top of the work.

During the fiscal year 1902-03 the weather face of the outer block, 100 feet long, having become decayed, was cut down nearly to the bottom and rebuilt for a width of 13 feet with heavy timbers secured in great measure with screw bolts, the outside being sheathed with 9-inch spruce. More than half the covering of this block was renewed. On it a new break was built 3 tiers in height for 26 feet; 2 for 61 feet and one tier for 13 feet in length. The covering was patched on other parts of the work.

Four new fenders were placed and the cap was renewed for a length of 47 feet. An extension of 50 feet, for which foundations were excavated through the shoals to the rock, was begun and brought up to a height of four tiers.

Like many other works in the Bay of Fundy, Anderson's Hollow crosses the direction of the flood stream and of the prevailing winds. In consequence, an accumulation of littoral drift is found on the south-west side which travels around the end, and is deposited under the lee of the breakwater, forming a shoal which is an obstacle to vessels.

The total expenditure to June 30, 1901, amounted to $14,824.30.

The expenditure in 1902-03 was $5,747.52.

BACK BAY.

Back Bay, Charlotte county, a fishing station about 4 miles west of L'Etang and2 miles east of Letete, is situated on an arm of Letete harbour in the County of Charlotte. At this place the provincial government built a wharf of crib and trestlework, 239 feet in extreme length, extending nearly to low water mark. An extension to this wharf of 86 feet, comprising a pier head 50 by 30 feet of round-timber cribwork fully ballasted, sheathed on both sides for protection from ice, a block 20 feet square on top, and two spans of 18 feet, the whole carrying the end into 8 feet at low water, was added by the department during the fiscal year 1900-1. This work was built by contract and completed.

Back Bay is a regular place of call for one of the steamers of Passamaquoddy bay, running from St. Stephen to Eastport, Campobello, Deer island, Letete and other intermediate points. Spring tides rise 24 feet.

Towards the end of the year 1901-2 a landing to suit different heights of the tide was begun ; a gallows for hoisting freight was built and a ladder placed against the face of the work.

In 1902-03 the steps on the north side of this new wharf, begun in the last fiscal year, were completed. To suit the different stages of the Bay of Funday tides, the steps were provided with three landings at intervals of about 7 feet in vertical height.

The total expenditure up to June 30, 1902, amounted to $7,459.46. The expenditure for 1902-3 was $75.76.

BATHURST.

Bathurst, the shire town of the county of Gloucester, with a population of about 1,500, is situated at the head of the Baie des Chaleurs. It is a station on the Inter-

ailway, about 120 miles north of Moncton, and the western terminus of the railway. Bathurst is one of the north shore deal ports from which, during ear, nearly 21,000,000 superficial feet of deals, &c., were shipped.

ppropriation was made by Parliament in 1901 for the construction of a new Bathurst, to be used for shipping lumber and other outputs of the district. examination of the place had been made, it was found that better facilities afforded at a less cost by acquiring and repairing the provincial government ilt many years ago on the eastern side of the public highway bridge connecturst town and Bathurst village. The provincial government subsequently l claim to the wharf, and plans were prepared for its reconstruction.

old wharf consisted of three blocks and two spans, forming a total length of from 27 to 37 feet wide at top, with a depth of water along the channel side end of 7 to 10 feet at low water. Spring tides rise 7 feet.

a little above low water to the top the wharf needed considerable repairs, on f the decayed state of the timbers. During the year 1901-2 the tops of the ks were rebuilt on an average height of 5 feet at a cost of $1,996.02.

ng the fiscal year 1902-3 the cribwork on the blocks was completed, three tiers being placed on each. Seven rows of 12 by 12 and 10 by 12-inch stringers ed over the spans and blocks respectively. The whole of the top of the work, feet, was covered with 4-inch plank, 10 by 12 caps were placed along both the outer end, and 59 fender-piles were driven around the work. The blocks l with ballast, and their exposed sides, forming a total length of 163 feet, thed with 4-inch spruce planks.

expenditure for the fiscal year 1902-3 amounted to $1,069.29. The total ex- to June 30, 1903, was $3,065.31.

BAY DU VIN.

du Vin, Northumberland county, is situated on the southern side of the inner i bay, 20 miles below Chatham, and almost opposite Burnt Church.

harf 760 feet long was constructed at Bay du Vin between the years 1891 and he provincial government. It consisted of an approach 80 feet long and 19 feet op, thirteen blocks, generally 20½ by 19½ feet, fourteen spans or openings of feet, and an outer block 80 by 30 feet.

tly after construction a length of 283 feet was swept away and a portion of nder damaged.

ay, 1901, a contract was entered into for the reconstruction of the part carried s to consist of four blocks 25 feet square and an outer block or pier head 83 and 30 feet wide on top, and five intervening spans of 20 feet, a total length et. The blocks and pier head were required to be built of round-timber open filled with stone ballast, the openings to be spanned with 12 by 12 stringers, overed with 4-inch plank and the sides and ends of the outer block sheathed ch hardwood. The outer end of the wharf is in a depth of 8 feet at low water.

he close of the year 1901-2 the first two blocks were built respectively 10 and 11 , and were ready to receive the stringers. The third block was built 13 feet o within 3 tiers of timber of the required height, and the pier head was con- 16 feet high or to within 2 tiers of timber of the required height, while the he fourth block was under construction, but not placed in position.

uly, 1902, an agreement was entered into with the contractor to fill in with the opening between the pier head and the fourth block, the work to be similar uction to the other blocks. The amount agreed upon for the construction of work was $575.

contract was finally completed on September 19, 1902.

expenditure for the fiscal year 1902-3 was $4,004.95. Total expenditure to 1903, was $10,447.44.

BLACK BROOK.

Black Brook (or Loggieville), Northumberland county, is situated on the southern side of Miramichi river, 6 miles below Chatham. It is the terminus of the Canada Eastern railway, and a port of call for the steamers of the Miramichi Steam Navigation Company.

During 1901 the department constructed a wharf at Black Brook, immediately below the Bently wharf so called. It consists of an approach or stone embankment 172 feet long and 20 feet wide on top, with slopes of 1 to 1 on the sides, a span of 15 feet and a pier head 25 by 40 feet of close faced timber work, forming a total length of 212 feet, with the outer end in a depth of 10 feet at low water. The top of the approach was finished with cross ties placed 8 feet apart, filled between with earth and gravel, and at the end of the ties, cap timbers were placed on each side of the work. The wharf was completed in October, 1901.

During a high tide, accompanied by a heavy storm soon after the work was completed, the earth and gravel were washed off the top of the approach, and the cross-ties and cap timbers were displaced.

During the fiscal year 1902-03 the cross ties and cap timbers were replaced in position and the ends of the ties secured to the upper stones of the slope with blind wedged bolts. Earth and gravel were again placed between the ties to a depth of 3 inches above the top of same, all openings on the sides were closed to prevent the gravel from working out, and a plank walk, 3 feet wide, was placed along the lower side of the wharf. A pile bulk head, 18 feet long and 9 feet wide, braced with walings and ties, was built from the lower corner of the Bently wharf to the inner end of the span of the departmental work, and the whole space, 120 feet long and from 10 to 20 feet wide, was filled with brush and stone, the top was finished with gravel level with the top of the departmental wharf.

The expenditure for the fiscal year 1902-03 amounted to $1,007.42.

The total expenditure to June 30, 1903, was $5,743.21.

CAMPBELLTOWN.

Campbelltown, Restigouche county, a deal port from which 24,142,117 superficial feet of lumber was shipped in 1902, and an incorporated town of some 3,000 inhabitants is situated on the southern side of the Restigouche river, in the county of the same name. It is directly opposite Cross Point in Bonaventure county, P.Q., 14 miles above Dalhousie, the shire town of the county, 6 miles below the head of tide water. Spring tides rise 11 feet.

In 1889 the department constructed a block, 140 feet long and 34½ feet wide on top, of close-faced cribwork, 108 feet below what was then known as the Ferguson wharf, and in 1892, another block of similar construction and width, to close the opening between the two works, giving a total frontage to the departmental wharf of 250 feet, with a depth of 12 feet at the outer face.

After the construction of the second block, the Ferguson work was sold to J. P. Mowat, and subsequently by him to Kilgour Shives.

As access could only be had to the departmental work by traversing the Shives' wharf, steps were taken in 1901 towards the acquisition of the latter, and as the work was in need of repairs, materials were procured at a cost of $2,224.32 during the same year, to effect such necessary repairs, but the work was not commenced owing to the property not having been acquired.

During the fiscal year 1902-03, however, the wharf became vested in the Crown, and repairs are about being commenced.

The sum of $226.50 was expended in caring for and looking after the timber procured for repairs.

The total expenditure to June 30, 1903, amounted to $23,023.83.

CAPE TORMENTINE.

entine, Westmoreland county, is situated on the south-western side of l strait, at the extreme eastern end of Westmoreland county. It is the New Brunswick and Prince Edward Island Railway and the nearest nication between Prince Edward Island and the mainland, the distance

v to forming an artificial harbour for purposes of interprovincial com- veen the island and the mainland during the winter, a breakwater pier by the department between 1886 and 1892.

re comprises a straight pier (or approach) 2,500 feet long, the first 1,300 a rubble mound 20 feet wide on top with pitched slopes of 2 to 1, and f close-faced cribwork, 30 feet wide on top, a pier-head and return of ction, each 400 feet long and 40 feet wide from the base up to a little , then decreasing to 30 feet at the finished top, which is 4 feet above ng tides. Between low water and the top of the work, the head and sloping face sheathed with hard wood to the east and south. The basin or harbour of about 4 acres in area with depth, up to the fall of 5 feet at low water, but increased since then over a section of same by feet.

s rise 7¾ feet, and neaps 3¼ feet.

ne ravages of the teredo, repairs became necessary to the timber section n after its completion and have since been carried on annually. They mainly in renewing the face timbers and sheathing of the sloping faces and return, protecting the north and portion of the south faces of the out 300 feet of the outer face of the head, with large and small stone, e piling along a portion of the south side of the approach.

1-02 a temporary quay face 180 feet long was constructed along the out- of the return, to afford landing facilities for the steamer 'Stanley' Cape Tormentine and Prince Edward Island during the winter.

consisted of piles driven every 4 feet along the outer face and of hard- work tied into the old work. Repairs were also made to different sec- ing face. Over 5,000 cubic yards of large and small stone were depos- northern and eastern faces of the approach and head; 361 creosoted n, generally 2½ feet apart, along the harbour sides of the pier, and a t long and 25 feet wide, for the reception of freight and also affording was built on the return section of the work, and 35,000 feet B.M. of ivered for levelling up 250 feet of the approach, which had become nsequent upon the action of the teredo.

fiscal year 1902-3 750 feet of the top of the approach were stripped of and levelled up from 6 inches to 2½ feet by placing new cross ties, ce timbers, all of which were treated with carbolineum; over a section bays on the south side from which the ballast had washed out, was e, and 75 creosoted piles were driven 2½ feet apart along the dock faces, d and 3 hardwood piles along the outside of the quay face built in ay face was extended westward 25 feet, this consisting of piles braced cross ties with the latter tied into the old work. At the south-east of close-piling (73 piles in all) were driven and secured above low s and braces tied into the old work, and further secured with four iron between the piling and the old work was filled with about 230 cubic allast and the top covered with 4½-inch plank. The quay face was pro- r plates on a length of 200 feet. A movable platform 20 feet long, 8 uilt from the eastern end of the new freight shed along the head of rtion of the freight shed was shingled and other minor repairs were face timbers and sheathing were placed on a length of 80 feet of the

sloping face, a new mooring post was placed in the outer end of the pier and 1,949·9 cubic yards of large and about 450 yards of small stone were deposited along the north and south faces of the approach and head of the pier.

The expenditure during the year 1902-03 was $14,788,21,, and the total expenditure on this work to June 30, 1903, amounts to $303,191.

CARAQUET.

Caraquet, Gloucester county, a thriving fishing settlement and a station on the Caraquet railway, is situated on the southern side of Baie des Chaleurs, 42 miles east of Bathurst, the shire town of the county.

For the purpose of establishing a deep water terminus for the shipment of lumber manufactured in the locality, a contract was entered into in March, 1902, with Messrs. Simmons & Burpee, of Maryville, N.B., for the construction of a block and span wharf 1,700 feet long, with a depth, along the outer 300 feet, of 22 feet at low water. Spring tides rise 6 feet.

The wharf is to consist of an approach or shore block 255 feet long and 25 feet wide on top, 25 blocks, 25 feet square on top, with sides battering 1 in 9; a pier head 300 feet long and 40 feet wide, and 26 spans or openings of 20 feet each. The blocks are to be constructed of round timber open cribwork, and the openings spanned by double 12 by 12-inch timbers.

The work of construction was commenced on July 7, 1902, and at the close of the fiscal year 1902-03 had progressed as follows: The approach or shore block and blocks Nos. 1 to 5 inclusive were completed, ready to receive the corbels and stringers; block No. 6 was constructed to within one tier of cross-ties of the required height, and blocks Nos. 7, 8 and 9 were built eight tiers high and placed in position.

The expenditure for the year amounted to $5,627.34.

CHOCKFISH.

Chockfish river, Kent county, empties into Northumberland strait about midway between the entrances to Richibucto and Buctouche harbours.

For the purpose of diverting the course of the outlet of the river, which is circuitous and obstructed by a bar at the mouth, and to obtain a straight entrance and afford shelter for fishing boats, the construction of a dam was commenced in the autumn of 1901. It was built outward easterly, from the western shore, a distance of 130 feet or to within 75 feet of a sand bar separating the river from Northumberland strait.

Before the work was commenced, the channel followed the western side of the river. During the construction of the dam, this channel worked easterly keeping pace with the outer end of the work as it progressed.

In resuming work in 1902-03 construction was commenced on the bar, running westerly 203 feet, and there connected with that built the previous year. This work consists of brush mattresses, generally 40 feet wide and 3 feet in thickness, upon which a rubble mound is built with slopes on each side of 1½ to 1 and 7 feet wide on top. Before depositing the stone, two longitudinal rows of piles were driven 7 feet apart and 5 feet centre to centre longitudinally; 70 piles were driven and 400 cubic yards of stone placed in the new and partly over the old work. The top of the rubble mound is generally 3 feet above the level of high water. A trench was cut through the beach about 300 feet above the dam which, with the assistance of the spring freshets, has become a new channel about 70 feet wide, giving a depth of 9 feet at high water, a better entrance than ever afforded at the place.

The expenditure during the fiscal year 1902-03 amounted to $1,839.70.

The total expenditure to June 30, 1903, $2,771.09.

APER No. 19

CLIFTON.

r Stonehaven, Gloucester county, a station on the Caraquet railway, is
e southern shore of the Baie des Chaleurs, 18 miles east of Bathurst, the
the county, and 8 miles west of Grand Anse.
ater at Stonehaven, originally 425 feet long and constructed by private
acquired by the department in 1878, and during the same year was ex-
t, making a total length of 750 feet. The outer 220 feet are placed at an
egrees, with the inner portion and the whole constructed of round and
cribwork filled with stone and partly protected along the northern and
y a stone talus. The harbour affords shelter for fishing vessels, the depth
eing 7 to 8 feet. Spring tides rise 7 feet.
886-87, 1887-88, between 1891-93 and again in 1897-98 and 1898-99, gen-
ere made to the work, and a portion of the northern and eastern faces to
west of the angle were protected by large stones of from ½ to 1 cubic yard

900 two openings in the eastern face, 16 and 19 feet wide, were closed
airs were made; materials were also procured for the construction of a
feet at the western end of the breakwater, for the purpose of preventing
ed along the northern face being swept westerly during easterly storms.
01 the timbers for the proposed block were framed and the old work was
length of 103 feet.
2 the top of the outer 200 feet of the breakwater was stripped and new
cross ties and covering placed; a tramway was built along the northern
ic yards of stone were placed along the northern and eastern faces, and
epairs made at different sections of the work, in renewing where necessary
nd face timbers. Also the substructure of the new block 70 by 40 feet of
bwork, was constructed 11 tiers or 9 feet 2 inches high, and successfully
western end of the breakwater.
he fiscal year 1902-03 the construction of the new block was completed,
the following work: placing and securing 10 tiers of 10 by 12 face timbers
es high), 5 tiers of cross ties, 4 tiers of longitudinals, 8 rows of 12 by 12
ring the work with 6-inch spruce planks, 12 by 12 cap timbers around the
, three 10 by 10 fenders on the corners and single ones 7 feet apart on the
ron straps on each corner and ballasting to the under side of the covering.
new 10 by 12 fenders 15 feet long were placed on the northern face of the
r, and 900 cubic yards of large stone were deposited along the same face,
ngle formed by the new block and the north-east corner of the old work.
nditure during the fiscal year 1902-03 amounted to $2,500.
expenditure to June 30, 1903, was $290,786.44.

COLE'S POINT.

int, Westmoreland county, in the parish of Dorchester, is situated at the
dy Bay, on the eastern side of the mouth of Memramcook river; it is
3 miles south-west of Dorchester, the shire town of the county.
ate the shipment of lumber, also to serve as a protection to vessels and as
the ferry service between Hopewell Cape, in Albert county and Cole's
act was entered into with J. B. McManus, of Memramcook, in 1901, for
n of a wharf off Cole's Point, the same to consist of *(a)* round timber open
feet long and 20 feet wide on top; *(b)* round timber open cribwork 260
25 feet wide on top; *(c)* round timber open cribwork 168 feet long and 30
top with double face timbers sheathed with 6-inch hardwood plank, and
d 60 feet long, 30 feet wide on top and 33 feet high, constructed of round
ribwork with double face timbers, and sheathed on all sides with 6-inch

hardwood. The total length of the work is 638 feet, covered with 4-inch planks. The depth of water at the outer end is 29 feet at high water. The work of construction was commenced in April, 1902, and completed on December 13 of the same year.

The amount expended during the fiscal year was $23,233.62.

The total cost of the work was $27,622.

FORT DUFFERIN.

Fort Dufferin, St. John county, a 10-gun battery built by the Imperial government to command the western entrance to St. John harbour, stands on high ground immediately above the end of Negropoint breakwater. In order to preserve from erosion by the waves the head line crowned by the battery, this department began in 1882, at tide level, a retaining wall of sheathed cribwork 430 feet in length, and in the following year constructed a further length of 303 feet. The work is exposed on the one hand to the force of the waves, and on the other hand to land slips.

In 1886-87 it was much disturbed by the sea, and repairs were made in that and the following years, 205 feet of the original work being rebuilt. From 1887 to 1889 repairs were also made, and in 1890 the work was extended 100 feet.

General repairs were made in 1893-94. The work is from 7 to 14 feet on top, and about 9 feet in mean height. The crest for the whole length is surmounted by a break 2½ feet high.

During the year 1896-97 a gap 81 feet long in the break was repaired, 200 lineal feet of longitudinals were renewed inside, and 128 cubic yards of ballast were restored to the work, while the sheathing was patched at intervals along the face with hardwood planking. In order to raise the beach, and so protect the lower part of the face, towards the end of 1896, a groyne 40 feet long, 10 feet wide and 4 feet in average height, was built of hardwood piles, timber and stone. In 1897 extension of the cribwork a distance of 130 feet was begun, and by the end of that fiscal year had been brought within two tiers of the full height.

In 1897-98 the new extension was completed, ballasted and sheathed. Small repairs were also made to the sheathing of the old work.

In 1898-99 four groynes, in all 232 lineal feet, each built of hardwood piles spaced four feet apart, driven from 9 to 12 feet into the bottom and planked with birch 9 inches square, securely strapped and bolted, were placed along the beach to protect the lower part of the sheathing of the breastwork; some ballast was also placed in the cribwork.

Ordinary repairs, comprising restoration of a breach in the face, ballasting and renewal of sheathing, were made during the year 1899-1900.

In 1900-01 the face was sheathed for 145 lineal feet; 10 piles were driven to restore, with the addition of cribwork, a breach 11 feet long; 62 lineal feet of large hemlock face timbers were inserted, some loose piles were rebolted, and 373 cubic yards of ballast were placed in the work. At the upper end, the breastwork was repaired for a distance of 235 feet by placing a new tier of 12-inch cross ties, 395 lineal feet of face timbers, and by the insertion of 24 knees, with as many chocks, secured by screw bolts.

In 1901-02, 136 spruce plies, 26 feet long were driven from 6 to 8 feet into the bottom for a distance of 108 feet along the face of the breastwork. In another place, for a total length of 126 feet, the face was sheathed with 6-inch spruce, and the old sheathing was patched at intervals for a length of 210 feet. A break 3 feet in height was also constructed of 4 tiers of spruce timber, supported at intervals of 10 feet by 21 framed braces, made of 8 by 8-inch spruce. Some brush was deposited at the back of the innermost block of cribwork, and beneath the adjacent groyne, for the purpose of assisting the accumulation of silt and drift.

In 1902-03 the face of the breastwork was protected with close piling for a length of about 178 feet; 14 pieces of spruce sheathing were applied to the work and about 40 cubic yards of ballast were placed. An extension of the protection was made for a distance of 94 feet by driving close piling, secured with double walings and stiffened by

PAPER No. 19

ened to piles driven 13 feet in the rear. The inside of this work was parti-
h brush and stone.
l expenditure to June 30, 1902, amounted to $24,632.01.
enditure for the fiscal year 1902-03 was $2,039.63.

GRAND ANSE.

nse, Gloucester county, a station on the Caraquet railway and a fishing
ith a population of between 700 and 800 inhabitants, is situated on the
re of Bay des Chaleurs, 25 miles north-east of Bathurst, and 15 miles west

purpose of affording shelter to the fishing boats of the locality and others
Bay des Chaleurs, the department, in 1876, commenced the construction of
breakwater placed between 500 and 600 feet from the shore, and subse-
nded it to a length of 397 feet, 159 feet of which forms a shore arm, and the
38 feet nearly at right angles to the former, a head with a sloping face of
north or seaward side.
view of giving increased protection to the fishing boats, a contract was
during 1901-02 with J. W. Dumas, for the construction of an extension of
ribwork 250 feet long, 21½ feet wide, and from 10½ to 13½ feet high to
the inner end of the present work shoreward, also for the removal of
nsisting of sand, mud and stones which had accumulated inside the harbour
ne original work.
close of the fiscal year 1901-02 the extension was constructed an average
feet on a length of 257 feet, the required length of the work at the bottom,
yards of material had been removed from the area required to be dredged.
the year 1902-03 the extension was completed, and 1,470 cubic yards of
s performed. The latter was carried on during the winter through the ice.
ce used, however, was not suitable to complete the work after the opening
n, and a dredge better adapted to perform the same was engaged, but owing
able weather, had not reached Grand Anse at the close of the fiscal year.
of the contract, therefore, yet remains to be completed.
were also made to the old work during the year, viz. : driving 6 fender piles
g 7 loose ones on north or outer face; stripping 20 feet of sloping face;
new face timbers, 10 yards of ballast and renewing part of the sheathing;
der on and close fendering two sections (10 feet each) of the inner face of
the breakwater with 10-inch hardwood.
ount expended during the fiscal year 1902-03 was $4,586.98.
l expenditure to June 30, 1903, was $31,515.42.

HERRING COVE.

Cove, Albert county, is situated 11½ miles west of Cape Enragé, forming
extremity of Salisbury bay, an indentation of the Albert coast of the Bay
Spring tides rise 37 feet and neaps 30 feet.
water, 215 feet long, 31 feet wide on top, and 43 feet high at the outer end,
this cove by the department in 1873 at a cost of $13,113.45. The inside
work is of square timber, while the outside, strongly battered, is of round
fendered. Founded on a reef under the lee of Mathew's Head and directed
's head, the work trending towards the land, lies in the general direction of
aves, and affords during storms some slight protection from the undertow
t, if beached in the extreme angle of the cove.
e is notable for good holding ground, and is one of the two places on the
ick coast of the Bay of Fundy, east of St. John, considered to possess natu-
favourable for the construction of a harbour of refuge.

Vessels carrying deals from Alma to the United Kingdom anchor in the roadstead off this breakwater to receive cargoes by lighter from Alma, two miles distant, the terminus of the Albert Southern railway, and from other places.

During the year 1896-97 repairs were made to the upper works of this breakwater, in consequence of the decay of the timber from age. In that year, the cribwork break extending the whole length of the work was removed and rebuilt, while the decayed part of the close fendering was almost entirely replaced by sound material, the expenditure amounting to $990.75.

During 1897-98 the work performed consisted on placing five rows of new floor stringers, each row extending for 200 feet; in laying about 18,000 feet B.M., of new covering on the top of the breakwater; in renewing the cap timbers, 12 inches square, for a distance of 160 feet; in placing 15 new fenders, varying from 13 to 20 feet in length, and in completing the repairs to the close sheathing of the seaward face by the addition of 51 pieces from 5 to 9 feet in length. At the same time, 82 cubic yards of rock were blasted from a reef which prevented vessels from going alongside the work. This work was executed by an expenditure of $500.

In the fiscal year 1902-03 twenty pieces of sheathing, which had been carried away by storm from the weather place, were replaced at a cost of $35.

The total expenditure to June 30, 1902, amounted to $14,603.70.

The expenditure during the fiscal year 1902-03 was $35.

HOPEWELL CAPE.

Hopewell Cape, Albert county, near the mouth of the Petitcodiac and at the head of deep water navigation, is one of several works intended for convenience of shipping in that large tidal river. Spring tides rise 45 feet.

In 1901 the construction was begun by contract of a new wharf intended to be 460 feet in total length, consisting of an approach of round timber cribwork, 210 feet long, together with square timber cribwork 250 feet long, which includes a pier head 50 by 35 feet on top and 48 feet high. By July 1, 1902, the cribwork and trestling of the approach had been built, and the pier head had been brought up to the 15th tier; while the square timber cribwork had been extended to a total length of 210 feet.

During the fiscal year 1902-03 the work was brought up from the 15th to the 46th tier or to the top, and the wharf was completed. As spring tides rise 45 feet, a movable slip was, by request, placed on the pier head for convenience of the traffic at the varying stages of the tides. Brush and stone protection was also applied to the outside of the pier head, the soft bottom of the Petitcodiac having scoured by action of the current. Some boulders scattered among the mud on the foreshore where vessels lie at low water, were removed.

By a fire which destroyed part of the village of Hopewell Cape, the top of the inner end, 300 feet long, of the old or ballast wharf was burnt. The fire obtained lodgement in the decayed or internal timbers of this work, and was with some difficulty extinguished in time to save the outer end of the wharf, which is built of square timber cribwork.

The expenditure to June 30, 1902, on the ballast wharf was $10,742.19, and on the new wharf $6,985.25.

The expenditure on the ballast wharf for 1902-03 amounted to $25.63, and on the new wharf $16,569.

HOPEWELL HILL.

At Hopewell Hill, in Albert county, on Shepody river, an arm of the Petitcodiac, a contract was let in 1900-01 for the erection of a new public wharf of round timber work. Construction was commenced in June 1901, and the work was completed in November of the same year. The wharf, 101 feet in total length, consists of a stone

APER No. 19

eet long and 30 feet wide on top; 2 blocks, each 20 by 40 feet, and two ans of 15 feet. The blocks are of open cribwork, planked on top, and fen- ides.

cal year 1902-03 a right of way to the wharf, 66 feet wide, was acquired, 0 feet long and 20 feet wide on top composed of alternate layers of brush built. The road, which is outside the dykes, is altogether in embank- being 10 feet in maximum depth. The works comprehends 2,216 cubic and clay in about equal parts. In the deepest part of the filling a cul- ng was built. The road was not quite finished at the upper end, but will rom local funds.

expenditure to June 30, 1902, amounted to $4,102.94.

diture for the fiscal year 1902-03 was $504.93.

LAMEQUE.

Gloucester county, a fishing settlement from which large shipments of lly made, is situated on Shippegan Island, on the eastern side of Ship- r.

900 a contract was entered into with Arcade Landry, of Shippegan, for on of a wharf at Lameque 990 feet long, affording a depth of 9·8 feet at he outer end and consisting of an approach or shore block 220 feet long de, 16 blocks 25 feet square, a pier head 30 by 40 feet, all constructed of pen cribwork fully ballasted and fendered, and 17 spans or openings of d by 12 by 12-inch stringers. The whole was to be covered with 3-inch

e year 1900-01 the shore block was constructed up to 1½ feet above, and locks from 1 to 1½ feet below the level of high water.

les rise 5·8 feet.

ble progress was made with the work between July and December, 1902, k being completed ready to receive stringers, and the other blocks con- lows: No. 1 to 2 feet, and Nos. 2 to 6 to one foot above the level of high to 10 to within 1·8 feet; Nos. 11 to 14 to within 2½ feet and Nos. 15 in 3·8 feet of the level of high water.

ring of 1902, during a heavy north-westerly wind, the work was severely rifting ice.

e year 1902-03 the damage caused in the spring of 1902 was repaired, and k was satisfactorily completed in January, 1903.

diture during the fiscal year 1902-03 was $5,904.84.

enditure to June 30, 1903, was $11,331.13.

LITTLE SALMON RIVER.

mon river, Albert county, a tidal inlet of the Bay of Fundy, 14 miles in the County of St. John, is the site of a mill producing lumber to the t $25,000 annually. At this place springs rise 30 feet. The beach pro- tle haven being in danger of denudation, a protection work, 430 feet long, 92 feet long, of piles and planking, extending along the crest of the lt during the fiscal year 1902-03.

diture during the year 1902-3 and the total expenditure at this place 799.48.

LORD'S COVE.

ve, Charlotte county, a small fishing settlement on Deer island, is a port mers plying between St. Stephen, St. Andrew's, Eastport and other points

on Passamaquoddy bay. To afford facilities for this steamer, the construction of a wharf was begun in 1900-1. Spring tides rise 24 feet.

The wharf, without the approach, is intended to be a pile and trestle work, 328 feet long and 21 feet wide, with a pier head 33 feet in height.

During the fiscal year 1902-3 this wharf was extended to the back of the pier head, a length of 120 feet, by driving 12 bents and by completing the laying of the covering and the cap. A gallows frame ladder and flight of steps were also made, in order that the public might make immediate use of the wharf. The work is now 289 feet long, exclusive of the stone approach 28 feet in length, and is reached by a rock cutting 61 feet long. The pier head, for which the piles have been procured, remains to be built.

The total expenditure up to June 30, 1902, amounted to $2,000.

The expenditure during the fiscal year 1902-3 was $1,000.

MIZZONETTE.

Mizzonette, Gloucester county, lies at the extreme eastern end of a small peninsula that separates the upper or western end of Caraquet harbour from Baie des Chaleurs, and is directly opposite the village of Caraquet, a station on the Caraquet Railway.

To accommodate the residents of the district, the department, in 1889, constructed a landing wharf 500 feet long off from Mizzonette Point. It was made up of a shore block 76 feet long and 12 feet wide, 12 blocks 12 feet square on top, a pier head 20 feet square, and 13 openings of 20 feet each. The blocks were constructed of open cribwork, the openings spanned by 10 by 12-inch stringers, and the top covered with 3-inch plank. The outer end stands in about 2 feet at low water.

Owing to decay and damage, and as the same depth of water was found 200 feet inward of the outer end as at the end, that portion was abandoned in 1897-8, and a new block 17 feet long and 12 feet wide was built on the eastern side of the seventh block, to form a new pier head. Slight repairs were also made to the remaining portion.

Spring tides rise 6 feet, neaps 4 feet.

During the fiscal year 1902-3 the portion of the wharf to be maintained having become almost impassable on account of decay, repairs were undertaken and were effected as follows:—The top of the work, for a length of 342 feet was removed; the approach, for a length of 50 feet, was levelled up with earth and gravel; in the next 110 feet, which now constitutes the shore block, 7 new cross-ties and one tier of face timbers were renewed, and longitudinals were placed in the outer 45 feet. In block No. 1, 3 cross-ties, 2 corbels and 2 face timbers were placed; in block No. 2, 3 cross-ties and 1 corbel; in blocks No. 3 to 7, levelling chocks were placed and the stringers, planking and cap pieces were renewed on this whole length of the wharf. Fenders were placed on five of the blocks and all were filled with stone ballast.

The expenditure for the fiscal year 1902-3 amounted to $697.61.

NEGRO POINT.

Negro Point, St. John county, is a headland about 60 feet above high water mark at the western entrance to St. John harbour, which is formed by the estuary of the River St. John on the northern side of the Bay of Fundy. Spring tides rise 25·33 feet. Neaps 15 to 20 feet.

In addition to convenience of position for distribution by rail of cargoes landed at the city of St. John, the harbour is remarkable principally for great tidal range, and for consequent freedom from ice in the winter months. The harbour is open, broadly speaking, from south-east to south-west, but southerly winds are broken by Partridge island and south-west waves are mitigated by Negro Point breakwater, while the Foul Ground, a shoal tailing down from the peninsula on which the city is built,

APER No. 19

ore or less effect in moderating the force of the easterly seas rolling
Point.

dge island, a rocky eminence devoted to quarantine and lighthouse pur-
rance of St. John harbour is divided into east and west channels. In the
in channel, a minimum navigable depth of 19 feet is found on the bar
t ordinary spring tides. Two hundred yards inside the crest of the bar
fathoms is obtained in the narrow fairway, while higher up and between
herly of the principal wharfs on either side of the harbour (450 yards
point), 12 fathoms are given in mid-channel.

channel 10 to 14 feet deep at low water, and originally 1,200 yards wide,
racted to about as many feet in breadth by Negro Point breakwater,
2,200 feet south-east by south from the headland so styled.

ns for undertaking this work are thus stated in the reports of the Minister
ks for 1875 and 1882.

his breakwater extends south-easterly from Negro Point at the western
. John, when completed it will extend a distance of 2,250 feet, closing the
to that extent, leaving, however, a width of 1,100 feet between the outer
idge Island. The object is to break the force of the seas which roll into
f St. John, during the south-west gales in the Bay of Fundy, and which
gerous and almost impossible at such times for vessels to make the har-

outh-westerly winds threw in a heavy sea through the western channel,
d it difficult for vessels to make the harbour, as they were in danger of
on the "Foul Ground" on the eastern side of the channel. In the spring
kwater 2,250 feet long to partially close the western channel, was begun,
mber, 1877, completed.'

e to the chart will show that as long as the present opening remains, the
breakwater has been only partially fulfilled. In dealing with the reduc-
r, a more cogent reason than improvement of shelter may be found for the
he work to Partrideg Island.

kwater consisted at first of a cribwork core, 30 feet wide at the base, and 15
he top (5 feet above high water ordinary spring tides), protected on both
stones sloping to seaward at the rate of two to one, and landward at the
one. In the month of February, 1879, 1,300 lineal feet of cribwork were
o a depth varying between 13 to 19 feet from the top, the stones having
own by the wave action to a slope more nearly resembling the angle of
material.

emporary repairs were made, and in 1881 a contract, completed six years
as entered into whereby the lost cribwork was replaced by heavy stones,
rd slope made three to one. Even this flatter inclination proved too steep
consequently, notwithstanding their size, the stones though smoothly laid,
placed by the sea. A length of 50 feet of the breakwater extending at full
a masonry pier, built under the same contract to support a beacon, was
ay. From 1891 to 1894 desultory repairs were made by the addition of
hiefly deposited about the end to prevent the lighthouse from being under-

nd June, 1895, four large blocks of concrete were placed for the same pur-
of the base of the pier. In 1895-96 seven concrete blocks, founded at
l of low water neaps, were built in situ round a quadrant of the outer end
foot of a slope proposed to be made of heavy granite blocks laid at the rate
. The concrete blocks were from 59 to 91 tons each in weight, all but the
laid in one tide. The granite pier was also reinforced by a semicircular
ete 7 feet in average thickness and strongly battered, placed round the
ought to the level of high water springs. The footing blocks were 15 feet
wide, and unless varied for the sake of the foundation, 3 feet high in the

face, sloping upward at the rate of four to one on the top. Each block was free to settle independently, but all were keyed together by splayed concrete joggles. Inside a part of the space within the quadrant stones of the original work added to small granite were assembled and grouted, as far as funds permitted. This course was taken in default of the heavy granite (which would require special plant), necessary for the slopes of this breakwater, where weight is the great desideratum.

Pending consideration of works necessary for deepening the entrance of the harbour, which might possibly involve the extension of the breakwater, nothing more was done during the year 1896-97, except the completion of the break at the shore end, than appeared requisite to protect the unfinished superstructure just begun, and to preserve the lighthhouse.

To this end, 15 blocks of concrete, forming aprons, were laid in position at the outer end of the work between October, 1896 and June, 1897. A quantity of stone, which had been swept around the point of the breakwater from the seaward to the harbour side, was also replaced in position. Some of this stone was laid outside the heavy footing blocks built in the previous year, and some was applied to restoration of the crest of the work at the back of the lighthouse. Breaches carried below the level of high water had been made by the sea at 5 or 6 points in the rubble mound between the ligthhouse and the shore. An illustration of the violence of the seas which assail Negro Point breakwater is afforded by the removal of a stone, which weighed 5 tons, a distance of 76 feet in one winter. A marine dynamometer, secured to the masonry of the lighthouse, records the wave force at 4,000 pounds and upwards per square foot.

In order to retain, for natural protection, along the seaward face of the work, the littoral drift formerly swept by the waves over the top into the harbour, a break of piles, brush, stone and timber, 279 feet long, 8 feet wide and 4 feet high, begun in 1895, was completed in 1896-97, and was also extended 140 feet along the timber work that year with good effect. As a result of the construction of the break the foreshore has advanced seaward, while the beach has increased in height and breadth.

Besides the general accretion of the beach, a tongue of drift, observed after the erection of the break to be near the shore, has at the foot of the talus on the seaward side travelled 200 yards or more towards the outer end of the breakwater.

The formation of this spit, generally 10 feet wide and 2 feet high against the work, indicates that the drifting sand, gravel, shingle, &c., which formerly went over the breakwater into the harbour will in time afford important natural protection to the work, and will reduce the length of the face to be maintained.

During the year 1897-8, as a measure of protection, 152 yards of granite were obtained and deposited about the lighthouse for protection during the winter, while stones previously removed by the sea were replaced in position.

The advance of the foreshore rendered necessary in that year the enlargement of the timber break, which was extended a distance of 80 feet along the breakwater.

A small groyne was also built for the purpose of obtaining some information as to the quantity of the littoral drift near the shore end. To preserve the timber, the top of the piles and the knees of the break were given two coats of pitch.

One thousand and nineteen cubic yards of granite were supplied and laid in place in 1898-9; while 285 yards of the original stone of the work, displaced by the sea, were restored to position.

During 1899-1900 414 cubic yards of granite were delivered and placed round the lighthouse; 606 cubic yards of dislodged stone were put back; 5 concrete blocks, containing 52·1 cubic yards, were also laid in place.

In 1900-1 five blocks of concrete, aggregating 54½ cubic yards, were built *in situ*, 1,313 cubic yards of new granite were received and placed, while 1,893 cubic yards of the original stone of the breakwater, removed by the sea (which on November 8, 1900, made two clear breaches through the work), were restored to position. The timber break was also extended two tiers for a distance of 40 feet.

PER No. 19

e year 1901-2 4,694 cubic yards of large stone, principally granite, to-
9 cubic yards of small stone, were delivered and placed in position. A
ge stones of the original work, amounting to 1,713 cubic yards, which had
by the sea, were restored to place by means of a floating steam derrick.
also made to the derrick and buildings.

e fiscal year 1902-3 4,603 cubic yards of large and 600 cubic yards of
re delivered and placed at Negro Point breakwater. This material was
to restoring the point of the breakwater to the original length—that is,
t 50 feet beyond the lighthouse. Although the stones were of large size,
ttle less than 1½ cubic yards (while some attained the bulk of 5, 6 and
ards each), a part of the restored point was swept away by the heavy
inter. Besides the new material added to the work, 2,201 cubic yards of
tone of the breakwater which had been dislodged by the sea, were, by
ating derricks, shifted and replaced either on the point of the break-
gaps made in the crest. The covering of the cribwork was also patched
plant overhauled, and a derrick for hoisting boats erected near the shore

work has either been extended to Partridge Island or has received a per-
tructure, constant repairs will be required.

expenditure on Negro Point to June 30, 1902, amounted to $495,259.82.
diture for the fiscal year 1902-3 amounted to $18,027.93.

NEGUAC.

Northumberland county, is situated on the eastern side of the inner Mira-
miles north-east of Chatham and 22 miles south of Tracadie.

892 and 1894 the department constructed at Neguac a wharf 1,180 feet
epth, at the outer end, of 5½ to 6 feet at low water. It consisted of an
rth and gravel, with sides of dry masonry, 80 feet long and 20 feet wide
block 290 feet long and 21 feet wide, 19 blocks 20 by 21 feet, a pier head
and 20 intervening spans or openings of 20 feet each. The approach and
ilt of round-timber open cribwork, filled with stone ballast, the openings
by 10 by 12-inch stringers, and the whole top covered with 4-inch plank.
les rise 5 feet.

ience of the decayed condition of the top of the wharf and damage caused
accompanied by a heavy storm during the fall of 1901, repairs became
an appropriation for that purpose was voted by Parliament in 1902 for
ring the fiscal year 1902-3.

performed during the year 1902-3 consisted in removing all the caps
f the work excepting that on the pier head. New 10 by 12-inch stringers,
of the work, were then laid over the old ones from the inner end of the
t to the inner face of the pier head, in order to raise the work 1 foot, it
und to be too low. Depths generally of 2 feet of stone, or a total of 503
stone ballast, were placed in all the blocks. New 4-inch covering was
hole of the work, and 6 by 8-inch spruce caps, along both sides, and 10 by
d the pier head, were placed. Six hardwood fenders, 10 by 12 inches,
the pier head, also 6 on each of the three outer blocks. The timbers of
all renewed, and the tops of the two blocks, which had parted at and
from low water, were replaced and secured with hook-shaped iron rods,
the timbers below low water, and bolted to those above. A 4-inch plank,
was placed on chocks midway on the top of the wharf for its full length,
ing the traffic to the centre. The tops of all fenders, caps and the truss
en two coats of carbolineum. Eight ring-bolts were distributed along
e wharf for a distance of 83 feet from the inner end of the covering of

the wharf; the approach was rebuilt, the sides consisting of stone embankments and the interior of gravel and earth.

The expenditure during the fiscal year amounted to $4,419.06.

PARTRIDGE ISLAND.

Partridge Island, St. John county, is a rocky eminence standing at the mouth of St. John harbour, and dividing the entrance into east and west channels. The island is devoted to quarantine and lighthouse purposes.

At the northern end of Pratridge Island, two narrow piers of cribwork, built many years ago, give shelter to the boat landing at the station. Between them a substantial block of new cribwork, 50 feet long and 22 feet wide, begun and nearly finished in 1896-97 as a foundation for the disinfecting house, was completed in the succeeding year. A boat slip intended for use at low stages of the tide, was partially built, a new mooring post put in, and minor repairs to the end of the west pier were made at the same time.

In the fiscal year 1902-03 the west pier of Partridge Island, 121 feet long and 17 feet wide, was raised by the addition of one tier of cross ties, new stringers, covering and cap. A house, 14 by 24 feet, was built for the boat of the medical officer, and a new derrick (excepting the mast) was made for the purpose of landing and launching the boat, the weather being too rough in the winter to allow it to lie afloat.

From the east pier, 110 feet long, 20 feet wide, 11 fenders were removed and were replaced by new ones. The break was strengthened by the addition of 7 new knees, the boat shed was shifted, the derrick rebuilt and a new cap laid. The top was also covered throughout with two thicknesses of 2-inch plank.

The total expenditure to June 30, 1902, amounted to $5,475.18.

The expenditure during the fiscal year 1902-03 was $1,302.01.

POINT DU CHENE.

Point du Chêne, Westmoreland county, lies on the western side of Northumberland strait and on the south-east side of the entrance to Shediac harbour. It is the terminus of a branch line of the Intercolonial Railway and a point of steam communication with Prince Edward Island.

The works at Point du Chêne consist of an inner and outer breakwater, each 600 feet long, with an opening of 80 feet between them, and a ballast wharf (so called), 200 feet long, connecting the outer breakwater with the Intercolonial railway wharf.

During the fiscal year 1902-03 repairs were made to the outer breakwater, as follows: 6 pieces of loose boiler plate at the foot of sloping face were removed and face timbers for a length of 50 feet were inserted. The 6 pieces of boiler plate removed were replaced, also three new ones in place of that number lost. Two fender piles were driven on the outer face and three pieces of sheathing of sloping face were renewed. Chocks were inserted at the back of the 12 fender piles that had been forced outward. The tops of the fenders that projected above the face of the work were cut off level with the top of the face timbers, and the covering and stringers, on a length of about 50 feet of the work damaged by storm during the fall of 1902, were removed and piled up at the back of the work.

The expenditure for the fiscal year 1902-03 amounted to $499.50. The total expenditure to June 30, 1903, was $81,194.81.

QUACO.

Quaco, St. John county, is on the northern coast of the Bay of Fundy, about 30 miles to the north-eastward of the entrance to St. John harbour. The bay is semi-circular, and lies open to the south-east between Quaco Head and Macomber Point,

s apart, the breadth from a straight line drawn between these capes being
At the mouth of a small river discharging into the eastern end of the
harbour of refuge has been formed by the construction of two piers, the
310 feet, and the western 302 feet long. The harbour is dry at low water,
cessible for about six hours during each tide to the coasting vessels which
timber or to seek shelter. Spring tides rise 30 feet; neaps, 23 feet.
7 repairs were made to the west pier for a distance of 149 feet, the sheath-
ping face and several face timbers being renewed with birch 14 inches
d with screw bolts, a quantity of ballast being replaced. A couple of
ladder were also added. At the same time, the east pier was protected
r of the stream from brush and stone, 13 new fenders were applied, and
ps of five others were replaced by sound material; small repairs were also
overing and sheathing, and another ladder was provided. The whole ex-
that year amounted to $1,377.51.
8 a sum of $50 was applied to closing a small opening and strapping the
est pier, which had been struck by a schooner.
cal year 1902-03 the sloping face of the east pier was reconstructed for
feet, the outer end being 10 tiers in height, and the inner end 7 tiers high.
expenditure up to June 30, 1902, amounted to $38,321.32.
nditure during the fiscal year 1902-03 was $673.34.

RICHIBUCTO.

o, Kent county, lies on the eastern side of Northumberland strait, about
en the entrances to the Miramichi bay and Shediac harbour. It is the
the county, a deal port, and a terminus of the Kent Northern Railway.
nce to the harbour is between two sandy beaches known as 'North' and
works originally proposed for the improvement of the harbour were two
ne to extend from the southern point of the north beach 1,200 feet, and
n in a north-easterly direction from the south beach, the object being to
ter to one permanent channel and so scour the bar at the entrance.
ary, 1873, the north pier was constructed for a distance of 1,200 feet. In
und that the sea, during easterly storms, followed the inside of the break-
l around the upper end and endangered the beach. From 1880 to 1882
ks were extended westward along the face of the beach to prevent erosion.
the same direction were continued during the years 1888, 1889, 1890 and
ths of 200 feet, 300 feet, 94 feet and 140 feet respectively, making the
length of 2,158 feet, composed principally of brush, stone and piling.
o the inner part of the eastern section were undertaken during the year
t the end of June a section of 238 feet in length was nearly reconstructed,
93 feet partly repaired and raised 3 feet.
900 the work commenced during the previous year was completed. Off
ce a pile, brush and stone groyne 33 feet long and 15 feet wide was con-
another of the same length rebuilt. Off the inner face two brush groynes
in length were built, and off the northern face of the breakwater, near the
ew breastwork 470 feet long and 8½ feet wide, consisting of pile framed
l on the outside and filled with brush and stone, was constructed.
a steam derrick was built for pile-driving and handling large stone.
al stake and brush groynes, aggregating 262 lineal feet, were built off the
the eastern section, and a protection, 26 feet wide and variable in height,
matresses (formed of fascines and evergreen brush) pierced with piles
with stone, was commenced on the harbour side of the outer section,
ard of the outward end and partially built outward for a distance of 132

In 1901-02 work was resumed in August with a view to continuing the protection work of the previous year a total distance of 866 feet, or out to within 300 feet of the outer end, and from the latter point, building an extension 315 feet long running in a south-easterly direction. One hundred and thirty feet of the extension were partly built, and then, owing to difficulty in procuring materials, work was closed down at the end of September. Plans were prepared and tenders called for, for the completion of the work.

The protection work is to be similar to that commenced during the previous year, while the extension is to consist of brush mattresses placed on the bottom, weighted with small stone, pierced by three rows of piles, driven 5 feet apart longitudinally and 4 feet transversely, and finished with large stone, forming a top 12 feet wide and sides sloping 2 to 1.

In February, 1902, a contract was entered into for the completion of the unfinished extension and protection as above. Work was commenced in the latter part of May, and at the close of the year four mattresses, 60 by 26 feet, had been placed for the protection work. Twenty piles were driven in the extension and 285 cubic yards of stone were delivered and placed in the work.

During the year 1902-3 the contract work was continued, and at the close of the year had been completed with the exception of delivering and placing about 855 cubic yards of slope and 350 cubic yards of core stone, adjusting some portions of the laid slope and filling in voids between the large stones.

Slight repairs were also carried on during the year by day labour, viz.:—Protecting with brush and stone three sections at the back of the old work (immediately to the westward of that under contract) from undermining, the first section 50 feet long and 7 feet wide, the second 60 by 5 feet, and the third 70 by 3 feet. A quantity of stone left piled on one of the sections of the work was evenly distributed over a length of 600 feet, and the tops of 150 piles and portion of the break timbers were given a coating of tar.

The expenditure during the fiscal year 1902-3 amounted to $16,555.25.

The total expenditure to June 30, 1903, was $116,724.47.

RIVER ST. JOHN AND TRIBUTARIES.

The river St. John proper, 450 miles long, takes its rise from sources in the province of Quebec and state of Maine, at a reputed maximum altitude of 2,159 feet above sea level. Entering New Brunswick at the confluence of the St. Francis, a little below the borders of Quebec, it continues to be the international boundary almost to Grand Falls, and after flowing through the province for nearly 300 miles (by way of the counties of Madawaska, Victoria, Carleton, York, Sunbury, King's and Queen's) discharges into the Bay of Fundy at St. John. Many tributaries, some being of considerable magnitude, are received by the main stream. Among them are St. Francis, Madawaska, Green river, Grand river, Salmon river, Aroostock, Tobique, Presqu'Isle, Maduxnakeag, Eel river, Nakawick, Nashwaak, Oromocto, Jamseg (Grand lake), Washademoak, Belleisle and Kennebecasis. Except the last five, which are slightly tidal for some distance, they are fresh water streams.

The total basin from source to mouth is computed to be 26,000 square miles, and is almost equal to the whole of New Brunswick; but as part of the watershed lies outside only a little more than one-half the province is drained by the river. The St. John is considered navigable for vessels 15 feet in draught for a distance of more than 50 miles from the mouth, but no positive information on this point has yet been obtained. About 8 feet at low water can be carried to Fredericton, 84 miles from the sea, and 6 miles below the head of tide at Springhill. Three natural features of the river are remarkable, viz.: the tidal falls, grand falls, and the annual floods.

Although in summer the fresh water stream between Woodstock and Fredericton is in places 400 to 1,000 feet wide, expanding at the latter place after reaching the

APER No. 19

alf a mile in breadth, yet the actual mouth of the river, a rocky gorge 400
mmediately at the head of St. John harbour, measures but as many feet
water. Here at low water at the level of the river is from 11 to 15 feet
and as the ordinary tides flow from 23 to 27 feet, the sea level at high
8 to 13 feet higher than the waters of the river. Thus there are two falls
viz.: one outward and one inward, and vessels can only pass when the
ocean and river are on a level. This occurs only for a space of 10 min-
ach ebb and flow of the tide; at all other times it is either impassable
dangerous. (Admiralty sailing directions.)

l Falls, 223 miles from the sea, the whole volume of the river plunges
t perpendicular face of limestone, 60 feet high, into a deep ravine 250 feet
hat similar to the narrow pass at St. John. Flanked for nearly a mile
ed cliffs, the confined current dashes from the foot of the falls with exces-
mining deep pot holes in the rocky bottom of the channel in the course
descent, estimated to be slightly less than the first. In the harbour of
inary spring tides are considered to rise 25¼ feet. At the wharfs of the
, a mile above the falls while summer range is but 3 feet, the highest flood
as 17 feet above extreme low water. At Oromocto, 73 miles from the sea,
l range is from 10 to 12 inches, the flood of 1887 reached a bridge 20 feet
ter. At Andover, 200 miles from the sea, floods attain an elevation of
feet above summer level. By contrast, the Tobique and St. Francis swell
respectively. After the first spate, due to the melting of snow in the
sins of the Kennebacasis, Belleisle bay and Washademoak, a secondary
caused by the back water of the main river, which is fed from sources
and consequently later in thawing.

our of St. John is open all the year round, but the river is ice bound from
April, an average period of 144 days.

r usually begins to rise in April, reaching flood pitch early in May, and
high level for two or three weeks. The ice run takes place before the
st water. By the middle or end of July, the water has fallen to summer
lasting, with some variations dependent upon the rain fall, for about 60

on to a little coal, a considerable quantity of cordwood, and the ordinary
yielded by the farms of a lengthy fertile valley, the trade of the river com-
abundance of valuable timber, fluctuating each season in amount, but
east equal to 135 million superficial feet annually. Most of the logs are
lown the tributaries and upper river to Fredericton, some being manufac-
nd shipped coastwise or to the United States. The remainder, or major
from the provincial capital to St. John in rafts, giving employment to
.

urpose of works, three divisions may be made of the river.

navigation, for steamers and sailing vessels between St John and Freder-
s, requiring 11 feet at low water. Principal obstructions: the Oromocto
1½ miles; the middle ground above Oromocto island, about 1 mile, and the
t Fredericton, rather more than ½ mile in length. The last are now
the other obstacles remain.

navigation, from Fredericton to Woodstock, a distance of about 65 miles,
ut 3½ feet at low water. The obstacle to inland navigation, besides
me places and perhaps bed rock at Meductic, are shoals of material more
, according to the strength of the current, varying in composition from
to stones. The chief bars are at Springhill and Bear Island; while
ley's, Coac, Nackawick, Belvisor, Moore's, Bett's, Dibblee's and Bedell's
eductic rapids, constitute according to present information lesser obstruc-
ding above Springhill into two main channels, and from a general width
opening to a stretch of 1½ miles between banks, with a water increased by

at least one-third, the river becomes dotted with eyots and shallows. Two gravel shoals, known as the Brussel and Chapel bars, together about ½ mile in length, compose the obstacle at Springhill. At Bear Island, 25 miles above Fredericton, in consequence of another division of the river into three channels, aggregating 600 yards in breadth, a shoal of gravel and stones 1 mile long, giving 21 inches at low water, has been formed. Besides dredging, a long training dyke will be necessary for the maintenance of this channel. After reuniting below the island, the width of waterway in the single channel is only 250 yards.

3. The upper river, including with the tributaries all that part above Woodstock. This division is now used for the passage of timber only. On some of the tributaries beyond the reach of railways, supplies for the lumber camps are transported in tow boats, for which channels are required to be made and tow paths provided.

Tidal navigation. The tidal compartment of the river St. John comprehends besides the main stream navigable by steamers which run daily between St John and Fredericton, a distance of 84 miles, four tidal arms all navigated by wood boats and regular passenger steamers, the extent of the whole tidal navigation being as follows:—

	Miles long.
Main river, St. John	84
Kennebecasis	24
Belleisle bay	12
Washademoak lake	27
Grand lake and Salmon river	35
Total extent	182

For the convenience of steamers and other craft navigating the main river and its branches, the provincial government has erected a number of wharves, towards which the department has made contributions amounting to one-half the certified cost.

During the year 1901-02 assistance was given to a number of these wharves, $3,000 being available for that purpose; while in the fiscal year 1902-03 $4,813.14 was applied to the same object.

A contract was signed on January 22, 1903, for the construction of a public wharf at Oromocto. The contractor was making preparations at the close of the fiscal year to begin work. The inspector's account up to June 30, was $12.

Main river, Victoria and Madawaska counties.—During the fiscal year 1902-03 a sum of $188.75 was applied to cutting, but not continuously, tow paths 6 feet in width between Edmundston and Grand Falls, a distance of 38 miles.

Grand Falls (Victoria county.)—In the summer of 1902 a point of rock at the foot of Grand Falls, 60 feet long and 55 feet wide, was blasted, the work extending to a height of 32 feet. In March and June, 1903, a quantity of rock, amounting to 722 cubic yards, was excavated from the same place. This work was done in order to disperse an eddy at the foot of the cataract, which intercepted and retained in the vortex a quantity of the timber passing down the river. The expenditure for the fiscal year 1902-03 amounted to $1,528.09.

Branches of the Tobique river (Victoria county.)—On the right hand branch of the Tobique, between the mouth of the Serpentine and the Trousers lake branch, a distance of 12 miles, 71 boulders, containing 154 cubic yards, were removed from the channel by blasting. The expenditure during the fiscal year 1902-03 was $300.

The work of making channels and tow paths for the present season was begun just before the end of the fiscal year 1902-03, the expenditure being $43.

At Big Falls on the Serpentine, a shear dam, 101 feet long, 57 feet wide and 6 feet high, was built of cribwork. Between Serpentine Falls and Dead Water, a distance of 3 miles, 187 cubic yards of rock were removed from the channel by blasting. Eight yards of rock were also blasted from McCarthy's Falls, 2 miles from the mouth of the Serpentine. The expenditure during the fiscal year 1902-03 amounted to $400.

APER No. 19

er (Madawaska county).—From the channel at First Falls, Lake Branch, 1 miles from the mouth, 111 cubic yards of rock were removed by blasting. re also cut on the main stream round the large eddies between Big Forks rks, 10 miles apart. The tow paths aggregated 765 feet in length, and were The expenditure during the fiscal year 1902-03 was $200.

d Falls, Green river, 15 miles from the mouth, 10 boulders equal to 89 f rock, were blasted during the fiscal year, at an expenditure of $87.09.

river (Madawaska county).—Just before the end of the fiscal year, the ing a dam and a sluice on the Iroquois river had been commenced. The luring the fiscal year 1902-03 amounted to $24.25.

cis (Madawaska county).—On the St. Francis, 6 yards of rock were oss Lake rapids, 11 miles from the mouth, and the channel was cleared. ald's Rocks, 3 miles from the mouth, 95 cubic yards of rock were removed The expenditure amounted to $200.

e of the cost of dredging, the total expenditure on the River St. John and June 30, 1902, amounted to $143,988.53.

le expenditure for the fiscal year 1902-03. including $760.49 for the fore- pper river, has been $8,556.81.

SHIPPEGAN GULLY.

n Gully, Gloucester county, a passage between Shippegan Island and the situated on the western side of the Gulf of St. Lawrence, and is distant -east of Shippegan village, the terminus of the Caraquet railway and 65 Bathurst, the shire town of the county.

iew of improving the entrance to the harbour, the department in 1875 ne construction of a breakwater on the eastern side of the gully and a dam to close what is known as the eastern gully, distant three-fifths of a mile ne main gully.

5 to 1890 the works were confined to the eastern side of the entrance, and ate consisted principally of a pier or breakwater at the point, and a breast- ne northern face of the beach, the whole having a length of 1,220 feet, which was constructed of cribwork and the remainder of brush and pile

1 and in 1883 the dam was repaired, raised and strengthened, and during r the pier was also repaired and extended 120 feet.

epairs were again made during 1883-84 and 1886-87. In 1888-89 the work xtended 50 feet by the construction of an additional block at the outer end. 890-92 a contract was entered into for the construction of a breakwater g off from the western beach, consisting of a pilework, brush and stone, struction of 137 feet of the outer portion of the eastern work.

3 and 1893-94 repairs were continued, and in 1897-98 plans were prepared epairs to all the works undertaken. These were continued until the winter ng year, during which time the dam was raised 3 feet over a distance of extended westerly 185 feet. An apron of brush and stone 375 feet long on the south side of the dam, and on the northern side 10 rows of stakes were driven forming groynes for the purpose of arresting the drift of sand, thus stopping the leaks, and at the same time protecting and the dam. Between the dam and Fruing & Co.'s fishing establishment, feet in total length, 2 pieces of brush, stake and gravel work, one 12 by and the other 13 by 46 by 4 feet, were constructed in order to preserve nd confine the team traffic to one course. Immediately to the east of 's establishment, a pile bent structure, 120 feet long, filled in with brush d a further length of 119 feet of brush and stone alone was built to close the harbour side of the beach. Near the inner end of the east pier, 63 feet

of pile bent work was constructed and between this work and the pier head, one breach of 22 feet, one of 62 feet and another of 70 feet were closed with pilework filled in with brush and stone. A gap of 90 feet in the pier head was closed by the partial construction of a close-faced cribwork block and a pile structure, each 45 feet in length, and other minor repairs were made. On the west side of the gully, 62 piles were driven at the outer end of the breakwater and 180 feet refilled with brush and stone. Along the west beach, a breastwork 1,669 feet long of stakes, piles, brush and gravel, was constructed to close runnels and raise the crest of the beach, and an opening of 43 feet between sand dunes was closed with stakes, brush and gravel.

During 1899-1900 the gap of 90 feet in the east work was completed. 455 feet were reconstructed with fascines, brush and stones. One pile groyne, 26 feet long, was built on the harbour side of the work, and another, 220 feet long, on the seaward side with stakes, brush and gravel. The dam was raised 3 feet with brush and stone for a distance of 495 feet. An apron 476 feet long and 8 feet wide was placed along the southern side, and an extension of 17 feet was made to the eastern end, from which latter point, a groyne, 180 feet long, of stakes, brush and stone, was constructed nearly at right angles to the dam.

In 1900-01 a new pile pier head, 44 by 34 feet, was built at the outer end of the eastern work ,and breastworks, 200 feet and 92 feet long respectively, were built on the outer and inner sides of the breastwork built the previous year on the west beach. 190 feet of the west breakwater was sheathed horizontally on the harbour side between high and low water, the interior of the work was strengthened by braces and an extension of 100 feet was made to the inner end.

During 1901-02, on the east side, the outer block of the breakwater was ballasted, one pile groyne 48 feet long was constructed and another partially so. The work to the east of Fruing & Co.'s was sheathed with 3-inch deals, and between this and the dam, a distance of 1,826 feet, a beach protection work was built. The dam was also raised 3½ feet, over a distance of 350 feet. On the west side, the outer 130 feet of the breakwater was strengthened with braces, piles were driven at its outer end, horizontal sheathing was placed for a further distance of 130 feet on the eastern side of same, and the outer 30 feet was partially filled with brush and stone. Also on the harbour side of the breakwater, a groyne 48 feet long was constructed and piles were driven to increase the length to 88 feet, and an extension of 175 feet was made to the inner end by driving close piles backed with brush and stone.

During the fiscal year 1902-03 the work to the east of Fruing & Co.'s was extended westerly 121 feet to stop erosion of the beach. This consisted of 163 piles driven close, 25 piles driven 6 feet apart and 8 feet back of the close piles, and the space between filled with brush and stone for a height of from 4 to 6 feet. Two new groynes, each 40 feet long, made of plies driven 4 feet apart ,and faced with 9-inch hardwood timbers, were built on the north side of the eastern work at distances of 350 and 500 feet from the outer end. Two groynes on the east side were increased in height by placing and securing two additional tiers of 9 by 9-inch hardwood timbers. The western breastwork was extended westerly 1,200 feet, the work consisting of 4 to 6-inch stakes driven 4 feet apart longitudinally and transversely, and filled with brush and weighted with gravel. The horizontal sheathing on the eastern side of the west breakwater was rebolted, 25 pieces of covering were renewed and 2 iron straps were placed around the outer corner.

The expenditure for the year 1902-03 amounted to $1,999.76.

The total expenditure to June 30, 1903, was $86,956.44.

ST. ANDREW'S.

St. Andrew's, the county town of Charlotte, lies by water 50 miles west of St. John. The site of the town was part of the seigniory of Passamaquoddy granted to St. Aubin in 1684. It was settled by the loyalists a hundred years later, and was for some

PAPER No. 19

of consideration, a military post, a fishing station, and a port of direct
ne West Indies. The town, situated at the mouth of the St. Croix, on a
eninsula stretching into Passamaquoddy bay, is well laid out, and has a
about 1,200. In the summer season St. Andrew's is a favourite watering
frequented by American visitors.
our, sheltered by Navy island a mile in length, affords about 8 feet at low
feet at high water ordinary spring tides. Repairs to the public wharf, an
of round-timber cribwork, 489 feet in length, built many years ago, were
e department in the spring of 1902.
nd of that fiscal year 16 bents (a distance of 142 feet) of the new work
cted; ballast poles and guard timbers had been laid for 128 feet, and the
ballasted for 90 feet.
1902-3 the repairs were extended to 322 feet in total length, and were com-
work is 18 feet in width. The top, of new stringers, ballast poles, ballast
g, is carried on trestle bents between the timbers of the old work. At the
the work repaired, a turning place, 40 feet long and 23 feet wide, also
trestle bents, was made for teams.
l expenditure up to June 30, 1902, amounted to $3,835.16.
enditure during the fiscal year 1902-3 was $799.62.

ST. GEORGE.

ge, Charlotte county, formerly called Magaguadavic, a small but flourish-
taining with the parish about 3,000 inhabitants, and situated at the head
r on the river of that name, is chiefly noted for lumbering and for the
works established there to manufacture the red granite of the neighbour-
ccount of the fine water-power due to the great fall, immediately at the
fresh to tidal water, a pulp mill has been erected.
e wharf, built by the county in tidal water, was partially repaired during
1-2 by the department. This old wharf of round-timber cribwork, 127 feet
feet wide, stands at the head in 24 feet at high water ordinary spring tides.
consisted in rebuilding and raising the principal part of the wing of the
t long and 20 feet wide, and in repairing the approach, 26½ feet long and

roach to this wharf, 36 feet in width, which had been scoured by heavy
repaired for a length of 25 feet, being filled in solidly to a depth of 6 feet.
imbers were also placed on the lower side of the wharf, at an expenditure

re wharf, 4 miles below St. George, is an old structure of round cribwork,
, consisting of a pier head 39 by 21½ feet, standing in 13 feet at high water,
by an approach of two blocks and one span 25 feet wide. Four tiers of the
re rebuilt, a new ballast floor was laid and covered with about a foot of
e new tier of longitudinals and two of cross ties were laid in the other
ew fenders were placed in position, and new stringers, covering and cap
he approach was also made up with brush and stone, the expenditure being

l expenditure up to June 30, 1902, amounted to $499.92.
enditure on both wharfs during the fiscal year 1902-3 was $775.

ST. LOUIS.

s, Kent county, is situated on the south side of the Kouchibouquac river,
es north-west of Richibucto, the shire town of the county.
ide wharf accommodation, the department in 1888 constructed a work 206
d 30 feet wide on top, on the south side of the public highway bridge at
7

St. Louis. It is built of round-timber open cribwork, with top planking, and has a depth of 7 feet at low water along its outer face.

In 1900-1, owing to decay, the cap, covering and fenders were removed, the top was filled in with brush and stone, finished with gravel, and a new cap placed.

The repairs undertaken in 1900-1, not having been completed, and settlement of the filling having taken place, work was again carried on during the fiscal year 1902-3, the following repairs being made:—Two tiers of timber, one 10 by 12 inches and the other 8 by 10 inches, were placed along the inner faces and lower end; fenders were secured on both sides and end, which were sheathed between the fenders with 3-inch deal from the top to below the level of low water. A layer of sand and gravel, 1½ to 2 feet in thickness, was deposited on the top of the wharf, and the tops of the fenders and sheathing were given a coating of tar.

The expenditure during the fiscal year 1902-3 amounted to $417.83.

The total expenditure to June 30, 1903, was $3,087.94.

ST. MARY'S.

St. Mary's, Kent county, is situated on the Buctouche river, 7 miles above the village of Buctouche.

In 1884 the department constructed a wharf 125 feet long, 18 to 37 feet wide, adjoining the public highway bridge. It is constructed of open cribwork of round timber, with its outer face in 7 feet at low water.

Spring tides rise 3½ feet.

Repairs were executed during 1901-02, consisting in the removal of the top and reconstructing the same, the timbers having been found to be in a worse state of decay than anticipated, the appropriation voted for that year was not sufficient to complete the repairs.

During the fiscal year 1902-03 the repairs commenced during the previous year were completed, 16 pieces of new ballast flooring, 20 to 22 feet long, were inserted in the work; 126 cubic yards of stone ballast were deposited over different parts of the wharf; 14 timbers were placed between the face timbers of the channel side of the work to prevent the ballast washing out; 10 fenders, 10 feet long, and a ladder were secured on the outer end, and 6 fenders on the inner face. A hand rail was built along both sides of the inner 30 feet of the wharf and the tops of the fenders, and mooring posts were given a coating of tar.

The expenditure during the year amounted to $198.96.

The total expenditure to June 30, 1903, was $2,311.20.

UPPER SALMON RIVER.

Upper Salmon river, otherwise called Alma, the terminus of the Albert Southern railway, is situated in the county of Albert, 5 miles from Rocher Bay, and two miles from Herring Cove. From Alma, deals are either sent in coasting vessels to St. John for transhipment, or are transported directly to sea going vessels lying at the anchorage off Grindstone island, or in the roadstead of Herring Cove. For protection of the coasters lying inside the river mouth at the private wharfs which affords four or five berths, the department built in 1883 and 1884 a breakwater 26 feet in mean width, and 180 feet long. In 1886-87 this breakwater was extended to a total length of 420 feet. By position the work lies across the path of the littoral drift. In consequence, the foreshore has advanced nearly 500 feet on the weather side, and the drift having fully charged the outside of the breakwater, is now working round the end. Accordingly inside the point of the breakwater a bar 11 feet in height was formed which extended nearly across the mouth of the river. By means of a temporary groyne, inducing scour, the channel, which had become contracted to a width of only 34 feet, was increasing

months of Arpil and May, 1900, to 125 feet in breadth, but the shoal was
l again.
gust 6, 1902, a contract was let for the construction of an extension of the
By the end of the year, the excavation for the foundation had been made
ıber work begun.
tal expenditure to June 30, 1902, amounted to $10,982.20.
penditure during the fiscal year 1902-02 was $555.43.

WILSON'S BEACH.

lson's Beach, Charlotte county, a fishing settlement in a slight indentation
t on the west side of Campobello, an island in the Bay of Fundy, forming
county of Charlotte, a breakwater 375 feet in length, was built to shelter
the joint contributions of the federal and local governments between the
and 1878. The outer arm of the breakwater having become dilapidated, and
ıving silted up, preparations were made in 1899-1900 to restore the inner
et in length, and the repairs were nearly completed in the following year.
quantity of material was also procured for the construction in deeper
e dismantled outer end.
1-02 the repairs to the inner end were completed. Crib No. 1 of the part to
ucted, 80 feet in mean length and 36 feet wide, consisting principally of
imber, was built, placed in position and ballasted. Crib No. 2, 74 by 40 feet,
nilar material, was also begun, and at the end of June had been built to a
tiers. A quantity of timber was also delivered.
fiscal year 1902-3, crib No. 1 was increased to 130 feet in length on the
raised at the inner end to the 26th and at the outer to the 23rd tier. Crib
rought up to the 23rd tier.
tal expenditure to June 30, 1903, amounted to $26,678.69.
penditure during the fiscal year 1902-03 was $4,004.84.

PROVINCE OF QUEBEC.

AMHERST.

t village is situated at the eastern end of Amherst island, one of the Mag-
ls in the Gulf of St. Lawrence, which forms part of the electoral district of

t is a port of considerable importance. Two steamers, plying between Pict-
and Magdalen islands, call twice every week at Amherst.
nding pier commenced at Point Shea in May, 1900, and built on a length
during the fiscal year 1901-2, was extended during the last fiscal year 250
g it, together with the 50 feet built from the outside face of roadway to side
otal length of 488 feet, with an average width of 26½ feet and an average
3 feet, giving 17 feet of water at the outer end at low water spring tides.
p of the work stands now 5 feet above low-water level, and four tiers of 12
rs will bring it to coping or floor level. The cribwork substructure settled
feet in sand and clay. On the outer or easterly side a quantity of ballast
to be placed so as to prevent the undertow from undermining the work on

proach, 530 feet in length, built in May and June, 1901, being altogether
narrow, and a portion having been carried away, some temporary repairs
ade on it, materials were bought and prepared to rebuild it in a more sub-
y.
rge scows for transporting ballast were built in the spring.
ount charged to this fiscal year appropriation is $11,798.23.
tides rise 4 feet; neap tides 2 feet.

ANSE À BEAUFILS.

Anse à Beaufils, in the municipality of Cape Cove, County of Gaspé, is situated on the Gulf of St. Lawrence, 6 miles south of Percé.

In the years 1898 to 1901, protection works on each side of the channel leading to the inner basin were built, consisting of two training piers, each about 440 feet long.

During the fiscal year 1902-3, the pier on the east side having settled in the sand 6 to 8 feet deep, the sum of $467.12 was expended in partly levelling the depressed portion.

The work was done by day labour.

ANSE ST. JEAN.

Anse St. Jean is situated on the south shore of River Saguenay, 25 miles above its mouth.

A public landing pier, 366 feet in length, having a depth of 7½ feet of water at its outer end, was built at this place, by the local government in 1876, and continued by the federal government in 1879-80-1880-81.

During the fiscal year 1902-3 the work done consisted of general repairs to the flooring, a new movable slip, sheathing and repairs to the shed.

Spring tides rise 17 feet; neap 10 feet.

The work was done by day labour at a cost of $657.91.

BAIE ST. PAUL.

The village of Baie St. Paul, in the County of Charlevoix, with a poplation of about 1,400, is situated on the north shore of the St. Lawrence, 60 miles below Quebec. It is built on either side of the River Du Gouffre, which empties into a bay one mile and a quarter deep, and three miles wide at its entrance. With the exception of some small channels the bay is dry at low tide. Spring tides rise 20 feet, neap tides 13 feet.

Isolated Block.—This block, built in 1874-5, is 200 feet long and 25 feet wide, with a head 60 feet long and 50 feet wide. It was built in 12 feet of water at low tide, on the west side of the bay, a distance of 3,000 feet from the shore at high tide and 600 feet at low tide. As the accommodation afforded to passengers and freight was so poor, it was decided to build a landing pier on the east side of the bay, at Cap aux Corbeaux, three miles from the village. The isolated block may become, in the near future, a subject of serious consideration as to whether it will be advisable to make very extensive repairs to it, or else to have it doomed to destruction.

The block is hardly safe for landing passengers. During the month of July, 1902, some repairs were done to the slip on the east side of the block, and broken face timbers have been renewed.

The expenditure was $395.69.

Cap aux Corbeaux.—During the fall, 1902, minor repairs were done to the wharf, and in the spring of 1903 hard maple sheathing was renewed and small repairs done to the flooring. The work was performed by day labour.

This expenditure amounted to $1,806.44.

The total expenditure for the fiscal year 1902-3 was $2,202.13.

BERTHIER *(en haut).*

Berthier *(en haut),* in the county of the same name, is a town of 1,600 inhabitants, situated on the north shore of the St. Lawrence, 45 miles below Montreal, and opposite the town of Sorel.

Construction.—In order to protect the village and wharfs against the action of drift ice, the sum of $2,000 was appropriated by parliament in 1886 for the construction

er which was completed in 1887, at a total cost of $1,611.04. Being found as raised three feet in 1888 at a cost of $99.97.

nt protection was not, however, afforded by the work to prevent considerable g done by the ice during the spring floods of 1896. A new ice pier 25 by 30 as therefore, constructed in 1897 on the edge of the beach, at the upper end at a total cost of $2,584.16. The piers have answered all expectations.

.—In 1892 minor repairs were effected to the ice pier built in 1887, at a cost In 1897 attention was called to the fact that the only protection the lower town had against ice shoves, was a low ice breaker at the head of the nd Ontario Navigation Company's wharf. The ice breaker being very much r, and the formation of the shore such that the construction of a new pier y good position would have been costly and an impediment to navigation. was obtained from the company to repair and increase the height of their was done at a cost of $733.29.

epairs were effected in 1898 to the ice pier built in 1897 at a cost of $8.50. the top of the ice pier built in 1887, being much rotten and dilapidated, l down to the low water level and rebuilt of the same form and size, but two than before. The work, carried out by day labour, was commenced in 903, and completed in June of the same year, at the cost of $1,354.32.

al amount expended on this work is $6,875.86, as follows:—

nstruction	$4,295 17
pairs	755 29
onstruction	1,825 40
Total	$6,875 86

BIC.

the south shore of the St. Lawrence, in the county of Rimouski, about 170 Quebec, is a favourite summer resort. It contains flour and saw mills, factories. Its harbour affords the best facilities of shelter for vessels of aught.

tides rise 16 feet, neap tides, 8½ feet.

the fiscal year ended June 30, 1903, the addition to the wharf commenced been completed; two isolated piers, one 25 feet square, the other 22 by 23 een brought to the level of the old wharf, a height of 5 feet, and were con- ther and to the rest of the structure with cedar stringers and a 3-inch flooring. A spruce deal sheathing, 3 inches thick and 18 feet in height, has all round the extension, forming a total length of 163 feet, the top flooring harf was also repaired.

penditure for the fiscal year 1902-3 was $990.15.

BOUCHERVILLE.

rville, an incorporated village in Chambly county, is prettily situated on nore of the St. Lawrence and a station of the Montreal and Sorel railway, n Montreal. It has a telephone office, a Roman Catholic church, one hotel, ne grist mill, a large convent, and a commercial college.

July and August, 1903, the sum of $880.43 was expended for general repairs ng pier at this place. The two mooring posts were replaced with two cast heads, a concrete flooring was built on the head block and approach, and the as repaired.

CACOUNA.

Cacouna, one of the best known and most frequented summer resorts in Canada, is an important village in the County of Témiscouata, on the south shore of the St. Lawrence, 120 miles below Quebec.

During the past fiscal year, in view of the construction of an additional block to complete the wharf begun some years ago, spruce timber, square and round, was bought for the sum of $1,313.60, but owing to delay in the delivery of that timber the construction of the extension could not be commenced during the year.

Spring tides rise 20 feet; neap tides, 12 feet.

CAP SANTÉ.

The village of Cap Santé, the chief town of the County of Portneuf, is situated on the north shore of the St. Lawrence, 5 miles below Portneuf, and 31 miles above Quebec.

Spring tides rise 14½ feet, neap tides 8½ feet.

The wharf at this place is built parallel with the shore, and has a landing face 118 feet long, accessible at half-tide by boats of light draught.

During the last fiscal year the sum of $397.10 was expended in effecting sundry repairs to the wharf, which consisted principally in improving the top flooring.

CARLETON.

Carleton is the most flourishing parish on the Baie des Chaleurs, in the County of Bonaventure, 12 miles by water from Dalhousie, N.B.

The village is on the shore of the Tracadigèche bay, at the foot of a mountain over 1,800 feet high, and is one of the most picturesque sites of the coast. It is already in great repute as a watering place.

The wharf at this place was built in 1882-3. It has a total length of 234 feet, including an outerblock of 39 by 39 feet, the shore end, on a length of 195 feet, is only 20 feet wide on top. The average depth of water at the outer end is 10 feet at low water spring tides.

During the last fiscal year the sum of $500 was expended in renewing the whole of the flooring and cap pieces with 3-inch spruce planks and cedar timber. Some of the sheathing and fenders were also renewed or repaired.

CROSS POINT.

Cross Point, County of Bonaventure, is situated on the north shore of the Restigouche river, about 15 miles from its entrance into Baie des Chaleurs, and opposite Campbellton, N.B.

On March 20, 1903, a contract was entered into with Messrs. Lachance & Co. for the construction of a wharf at this place. The structure has a total length of 455 feet, 20 feet wide, with the exception of the outer end, which is 35 feet wide for a length of 45 feet, where the landing slip is built.

The work consists of a stone approach or embankment 60 feet long, 20 feet wide on top, with sides and end sloping 1 in 1; of a cribwork abutment, 20 by 20 feet, two blocks or piers of cribwork, 20 by 20 feet, placed 20 feet from each other and from the abutment and outer block; and of an outer block 275 feet long. The spaces between the piers at the inner end are spanned with stringers; the whole wooden structure is covered with planks and built of close-faced cribwork, ballasted with stone. The outer end is 15 feet high above the bottom of the river, and the top stands 4 feet above high water spring tides, which here rise 11 feet.

The wharf is intended to be approached at high tide only; during low water spring tides its outer end is left dry.

d of the fiscal year 1902-3 the work had been built to within 4 feet of the
nt. It has since been entirely completed. The expenditure at the end of
was $4,999.47.

CUISSES D'ALMA.

es d'Alma, in the little discharge of Lake St. John, is in the parish of St.
a, and 7 miles from the village of that name.
ar 1901-2 work was commenced to blast the two rocks called 'Cuisses
der to widen the channel of the 'Petite Décharge.' During the fiscal year
rk was continued. The sum of $1,229.27 was expended.

FATHER POINT.

oint, in the County of Rimouski, is on the south shore of the St. Law-
west of the village of Rimouski. On November 8, 1900, a contract was
vith Messrs. Heney & Smith for the construction of a wharf 600 feet in
vidth of 40 feet at the bottom and 32 feet at the top, with a depth of 16
ater spring tides at the outer end.
was commenced in 1902 and pushed vigorously, but owing to difficulties
n caused by the winds in this exposed locality, several delays occurred,
had not been completed at the end of the fiscal year 1902-3.
nditure for the year 1902-3 is $22,355.85.

GRANDES BERGERONNES.

Bergeronnes, in Saguenay county, is on the north shore of the St. Law-
s below Tadousac.
val of boulders, by blasting, from the mouth of the River Grandes Ber-
continued during the last fiscal year.
l, 150 feet wide, from the entrance of the river to the village, a distance
completed.
was done by day labour, at a cost of $398.77.
f cribwork, 20 by 30 feet, was commenced on the west side of the river,
diture of $239.30.
expenditure for the fiscal year was $638.07.
les rise 16 feet, neap tides 9½ feet.

GRAND ENTREE.

tree is situated on the western end of Coffin island, one of the Magdalen
County of Gaspé.
0 by 50 feet, was built inside of the harbour during the fiscal year 1900-01,
in 1901-2. The outside face and corners had to be reinforced both inside
ell braced and sheathed. An approach, 128 long by 18 feet wide, with a
f 5 feet, was built to connect the block to the shore.
$81.51 was expended in the spring of 1903 for painting the shed and
o the pier and building. From 10 to 12 feet of water are to be found at
e pier at low water spring tides.

GRANDE VALLÉE.

allée County of Gaspé, is on the south shore of the River St. Lawrence,
Ste. Anne des Monts, and about 45 miles by land from Gaspé Basin.
ew of affording much-needed landing and shipping facilities to steamers,
other small vessels calling at this place, together with shelter to fishing
y weather, it was decided to build a breakwater wharf at this place.

On June 29, 1901, a contract was entered into with Messrs. Heney & Smith, of Ottawa, for the construction of this wharf near the mouth of Grand Vallée river.

The structure will have a length of 900 feet, a width of 25 feet on top at the inner and 29 feet at the outer end, which will be in a depth of 14 feet at low water spring tides, built throughout of close-faced timber cribwork, with a batter of 1 in 10 on both sides, filled with stone and sheathed on the weather side with hardwood planks 6 inches thick. The top of the work will stand 8 feet above high water spring tides. Spring tides rise 10 feet.

The work was well under way at the end of the fiscal year 1902-3. The expenditure during the year was $7,468.52.

GRINDSTONE.

Grindstone is a village on the south side of Grindstone island, 4 miles east of Etang du Nord. The population is composed mostly of Scotch farmers and Acadian fishermen.

For years past most of the freight for the Magdalen islands has been landed here, and the building of a landing pier was greatly needed. In the fiscal year 1901-2 an approach of 605 feet, 25 to 50 feet wide, and of an average height of 9½ feet on the outer face, was built along the eastern side of Grindstone cape.

The outside face of the approach, exposed to the heavy easterly gales from the Atlantic ocean, is protected by a sheathing of split spruce logs held in place by two sets of walings fastened by cross-ties and a double set of posts. A mattress of brush was laid under the stone filling taken from the cape.

During the fiscal year 1902-3 the pier was extended 255 feet, with an average width of 25½ feet and an average height of 19 feet to coping or floor level, and floored. The depth of water at the head of the work is now 11½ feet at low water spring tides.

A crib 100 feet long by 29 feet at outer end was partly built at the end of June.

The amount charged to Grindstone works during the last fiscal year is $11,084.80.

Spring tides rise 4 feet; neap tides 2 feet.

HOUSE HARBOUR.

House Harbour is an important parish on the western end of Allright island, one of the Magdalen islands, in the County of Gaspé.

The pier built at the channel during the fiscal year 1900-1 forms an oblong of 50 feet by 100 feet, with 10 feet of water at the head. A sum of $64.25 was spent to buy materials for repairs to the flooring. The head of the pier being undermined has settled a foot.

HUDSON.

Hudson, in the County of Vaudreuil, is situated on the south shore of Lake of Two Mountains. It is a favourite summer resort.

In October, 1901, the old wharf of Mr. John McNaughton was transferred to the department for the sum of $800. As the top of the wharf was in an advanced state of decay and dilapidated, it was removed to the lower water level, and rebuilt with an extension of 20 feet long, by 20 feet wide, at the eastern end.

The new wharf is constructed of close-faced cribwork, of a total length of 102 feet by a width of 20 feet, and a stone embankment or approach, of a length of 135 feet, from the shore to the head block, by a width of 20 feet for the first 92 feet from the shore, and a width of 42 feet for the remaining 43 feet to the head block, with sloping sides of 1 in 1, and guard railing. A storehouse, 18 by 24 feet, with waiting-room, was erected at the western angle of the head block and approach. The work was carried out by day labour, and was not completed at the end of the fiscal year 1901-2. The amount

PAPER No. 19

as $3,999.40. During the fiscal year 1902-3 the work was completed at a cost
0.
tal expenditure on that work, including the purchase price, is $5,096.30.

HULL.

ne shire town of the county of Wright, is situated on the Ottawa river, oppo-
of Ottawa. It possesses unrivalled water power privileges and contains a
saw mills, a pulp and paper manufacture, a match factory, &c., &c.
rge iron bridges span the river at this point connecting Hull with the city of
opulation, 15,000.
rk of building a concrete and masonry wharf on the Ottawa river at the foot
zabeth street, was awarded by contract on October 30, 1900.
arf consists: 1st, of a landing block 130 feet wide and 70 feet long, built
different levels in ten feet of water, and consisting of a cribwork substruc-
ow water level, and a superstructure of concrete masonry walls with filling
m. 2nd, an approach from shore to the landing block 403 feet long, built
three different levels, consisting of dry rubble masonry walls with filling
m. During the fiscal year 1900-01 the cribwork substructure of the landing
portion of the dry walls were built and some filling made, at a total cost of

the fiscal year 1901-02 the work under contract was completed and other
provided for by contract were performed. These included: the cementing
s of the coping stones of the dry masonry walls for 1,200 lineal feet at a cost
the construction of an iron tube railing on both sides of the approach for a
18 feet at a cost of $718, and the construction of a roadway on St. Elizabeth
feet long, 30 feet wide and protected on both sides by rip-rap walls built at
ne to one, at a cost of $2,615.62.
the fiscal year 1902-03 some minor works were performed to complete the
oughly and a substantial freight shed 50 by 40 feet dimensions, and two
, was built.
diture for fiscal year, $3,207.05.
tal expenditure for this work up to June 30, 1903, is $54,049.76.

ISLE AUX COUDRES.

sland, with a population of 1,500, is in the county of Charlevoix, 62 miles
ec, and one and a half miles from the north shore of the St. Lawrence, the
eing opposite Baie St. Paul. This island is 9 miles long and 3 miles broad.
s rise 20 feet, neap tides 13 feet.
vember 9, 1901, a contract was entered into with Mr. Michel Francœur for
ction of an addition to the wharf, the contract was fulfilled during the first
fiscal year, and the final estimate forwarded on November 17 last.
ork consisted in the construction of an extension 60 by 30 feet, and 42 feet
outer end of the wharf. The depth of water at the outer end of the exten-
feet at low water.
xpenditure during the fiscal year was $4,346.32.

ILE AUX GRUES.

Shore.—Ile aux Grues, or Crane island, with a population of about 750, is
ying in the St. Lawrence, opposite Cap St. Ignace, 30 miles below Quebec.
s rise 18 feet; neap tides 12 feet.
lated cribwork and lighthouse were built near the upper end of the island
he block was placed about 140 feet inshore from low water mark. In 1881

it was extended outward 171 feet, to a depth of 4 feet at low water spring tides; and in 1885 the block was connected to the shore by solid cribwork 468 feet long, 25 feet wide. The pier is now 639 feet long, of a uniform width of 25 feet, with the exception of its outer 75 feet, which is 35 feet wide.

The wharf was of little use for local traffic, owing to the want of proper shelter in the vicinity and its inconvenient location, the inhabitants of the island being mostly settled on the north shore of the island, where safe harbouring for all craft is available. For this reason the wharf was left in a bad state of repair until 1902, when it became urgent to renew some portions of the work to prevent serious damage to both the wharf and the lighthouse.

An appropriation was voted by Parliament at its session of 1902, and repairs were commenced in the month of August of that year.

With the exception of the sheathing, the superstructure has been entirely renewed for a length of 330 feet from the outer end and on an average height of 13 feet the stone ballast having to be removed and again put in the repaired portion.

The materials used in the work were: 15,000 lineal feet of spruce timber, from 10 to 12 inches square; 16,000 feet B.M. of spruce deals, and nearly 300 cubic yards of stone ballast. The work was done by day labour during the months of August, September, October and November.

The amount expended was $4,697.64.

North Shore.—As the wharf on the south shore of the island is of little avail to the inhabitants, who all live on the north shore, and to facilitate the shipping of the farm produce from the island, a wharf was constructed by contract on this shore in the year 1901-2, at a cost of $8,709.66. The wharf has a total length of 730 feet, and consists of a head block 80 feet long by 30 feet wide, and a mean height of 18 feet, and 14 piers 20 feet long and 22 feet wide, placed 24 feet apart and connected by timber spans, together with an approach 34 feet in length, built of stone and gravel. During the last fiscal year an additional length, of 50 feet by 30 feet wide and 20 feet high, was built at the outer end of the work built in the previous year, in order to attain a greater depth of water and accommodate the increasing traffic. The depth of water at the end of the wharf is 14 feet at high water neap tides.

The work was done by day labour at a cost of $2,533.62.

The total expenditure since the beginning of the work is $11,215.25.

ILE VERTE.

The village of Ile Verte, in the County of Témiscouata, is situated on the south shore of the St. Lawrence 16 miles below Rivière du Loup and 131 miles east of Quebec. It contains flour, carding and saw mills, and has a population of 4.600.

Spring tides rise 19 feet, neap tides 12 feet.

During the fiscal year 1902-3 the following repairs and improvements were made to the wharf :—

The flooring on a surface of 13,200 square feet was renewed with 3-inch spruce deals; a middle pathway, 4 planks wide, has been placed on a length of 600 feet; 75 spruce stringers, 20 feet long, 10 by 10 inches, were used to replace the decayed ones, and to strengthen the decking at some places; face timbers 200 feet in length, broken by ice or decayed, have been renewed; two coats of paint were applied to the combined freight shed and waiting-room, and the cap timbers and mooring posts have also been painted.

The work was done during the months of August and September at a cost of $1,467.09.

LAPRAIRIE.

Laprairie, the chief town of the county of the same name, is situated on the south shore of the River St. Lawrence, 7 miles above Montreal.

fiscal year 1902-3 one of the ice-breakers, the eastern one, built in 1887
d of the town, being so rotten and dilapidated that it would no more
being done to property during the breaking up of the ice in the spring,
decided to rebuild it.
pier was removed to the bottom, and a permanent concrete ice breaker
ts place. It has a length of 40 feet by a width of 22 feet at the base,
25 feet. The side facing the St. Lawrence is sloped 1 in 1½.
was carried out by day labour at a cost of $3,653.49. During April,
1903, extensive repairs were made to the protection wall at a cost of

nditure—$4,997.08.

LES EBOULEMENTS.

of Les Eboulements, in the county of Charlevoix, with a population of
on the north shore of the St. Lawrence, 72 miles below Quebec. Spring
t; neap tides, 13 feet.
s underneath the sheds have been renewed, three rows of face timbers,
ongitudinals have been replaced, and the flooring made anew.
le work was done to the buildings, waiting room and freight sheds ;
almost entirely rebuilt and two coats of paint applied.
n both sides of the wharf having been damaged by the ice, were thor-

ood sheathing of the outer face has been renewed on half the surface
rs 6 inches thick, 36 spruce fenders 30 feet long, were put up along the
to replace those that had been carried away by the ice.
le slip was renewed and fitted with new pulleys. General repairs have
to the flooring, cap timbers and sheathing in the whole of the wharf.
done by day labour.
xpenditure incurred during the fiscal year 1902-03 amounts to $1,960.80.

LES ECUREUILS.

ils is in the county of Portneuf, on the north shore of the River St.
iles above Quebec, it is distant from any railway communication, and
oach by water.
es rise 17 feet; neap tides, 10 feet.
small government wharf, but owing to a large batture of rocks, it is
during high water spring tides.
te the communication by water the sum of $746.04 was expended towards
rocks, and for repairs to the wharf as well as the construction of a
r the protection of merchandise which is frequently delayed for days
nsufficient water for the market steamer.

LES ESCOUMAINS.

mains, in the Saguenay county, is situated on the north shore of the
ence, 21 miles below Tadousac.
nay Lumber Company have an extensive saw and pulp mill at this place.
e fiscal year 1902-03 the sum of $592.29 was expended in removing the
obstructed the channel.
es rise 15 feet; neap, 9 feet.

L'ISLET.

e of L'Islet, in the county of the same name, is situated on the south
t. Lawrence, 50 miles east of Quebec.

Spring tides rise 21 feet; neap tides, 13 feet.

The wharf at this place has a length of 1,105 feet, and a width of 31 feet, with a head block 56 feet long 116 feet wide and 34 feet high.

The wharf is substantially built, with close faced timbers throughout; a depth of water of 8 feet is left at low water spring tides along its outer face.

During the fiscal year 1902-03 general repairs were made to the wharf. The slip on the west side, which had been damaged by ice, was repaired, cap timbers have been renewed; the sidewalks were repaired, and the roadway was levelled with sand and gravel.

Thre work was done by day labour at a cost of $599.11.

LONGUEUIL.

The town of Longueuil, the chef-lieu of the County of Chambly, is situated on the south shore of the River St. Lawrence, nearly opposite the eastern end of the city of Montreal.

During the fiscal year 1902-3 repairs were effected to the government wharf at this place. They consisted in renewing about 500 lineal feet of the last tier of timbers which had been damaged and broken by the ice. The up stream side of the wharf has been protected by steel boiler plates 4 feet wide on a length of 500 feet, which has given satisfaction. During the last breaking up of the ice no damage was caused.

The work was carried out by day labour at a cost of $1,123.33.

LOTBINIÈRE.

Lotbinière, in the County of Lotbinière, is situated on the south shore of the St. Lawrence, about 40 miles above Quebec.

Spring tides rise 14½ feet; neap tides 8½ feet.

An isolated block, for connection with the shore by a trestle approach, was constructed by the department in 1896. This was somewhat damaged by ice pressure during the winter of 1900, and, being found too small, it was decided in 1901 to strengthen and enlarge it, the work to be done by day labour.

The block is located about 500 feet from the shore. The trestle approach, which has to be placed every spring, is usually delayed, when most required, by high water.

During the fiscal year the work of enlargement, commenced in 1901 was continued. A portion of a foundation crib was also constructed to facilitate the earlier placing of the trestle approach in the spring.

The expenditure amounted to $2,369.42.

MARIA.

Maria, County of Bonaventure, is a prosperous village on the north coast of the Baie des Chaleurs, and a station of the Baie des Chaleurs Railway, about 10 miles north-east of Carleton. Population, 2,300.

On May 31, 1902, a contract was entered into with Messrs. J. Burns and W. J. Laughrin, of Ottawa, for the construction of a wharf at this place. The structure has a total length of 932 feet, of a uniform width of 20 feet, covered with 3-inch plank. Its outer end reaches a depth of 4 feet at low water spring tides, which here rise 9 feet, the top of the wharf being 4 feet above high water spring tides.

The outer end of the wharf, for a length of 730 feet, is built of solid close-faced timber cribwork, filled with stone ballast. The remaining length of 202 feet, at the shore end, consists of five separate cribs or piers, 20 by 20 feet, placed 20 feet apart and connected with stringers covered over with 3-inch planks. A short stone approach connects the shore with the first crib. The outer end is provided with a landing slip on the west side.

ER No. 19

of the fiscal year 1902-3 the work had been completed to within 4 feet
has since been entirely completed.
ture at the end of the fiscal year was $11,991.13.

MATANE.

of Matane, in the County of Rimouski, is situated on the south shore
nce, at the mouth of the River Matane, 240 miles below Quebec, and
ttle Métis station, the nearest point of the Intercolonial Railway. It
e sawmills and a spoolwood factory.
iscal year 1902-3 boulders and tree stems, which obstructed the channel
were removed at a cost of $9.
rise 14 feet; neap tides 7 feet.

MONTREAL HARBOUR (LOWER DIVISION).

constructing the high level pier at Maisonneuve has gone steadily on
ecember, 1902, and then from April, 1903, to the end of the fiscal year.
the cribwork were sunk and loaded, which, added to the 5 already in
tal of 14 sections at the end of 1902.
g of concrete footing blocks, which had only begun in the previous
l on during July, August and September, 1902, and a total of 1,100
ilt at the quarry, of which 380 were laid in the work.
g of monolithic concrete walls was also begun in September, 1902, and
t 800 feet built to a height of 18 feet above datum.
behind the walls was carried on as the work progressed, and the earth
ought to within 4 feet of the top of the wall, or to 14 feet above datum
n bulkhead.
also deposited along the centre line of the new pier, and in rear of the
g the season along the south-western line of the wharf.
ing of navigation the work was resumed, and the bottoms for five sec-
work wall were built and launched, these being 6½ feet deep at the time
The excavation for the eastern line of cribs was advanced.
g of the concrete walls resumed at the extreme west end of the bulk-
ed to 28 feet above datum, being 5 additional feet on the proposed
t.
of wall built was 800 feet to the end of section No. 5.
was too high until August to resume the laying of the footing blocks.
ding of the concrete walls had to be adjourned, when the wall built in
completed.
of the fiscal year there remained to complete the work, the following
tions out of 20; 2,300 feet of concrete wall to build out of 3,100; and
g blocks out of 1,240.
ined to excavate the site of three sections, or about 500 feet in length,
of two-thirds the area of the pier.
iture during the fiscal year 1902-3 was $251,320.47.

NEW CARLISLE.

le, on the north shore of the Baie des Chaleurs, is the chief town of the
venture, distant 65 miles from Campbellton, N.B. A pier 606 feet
o 49 feet wide and reaching 15 feet depth at low water spring tides, has
is place by the department between 1881 and 1883.
an extension of 70 feet in length was built, with its outer end in 16 feet
tide.

Spring tides rise 6½ feet; neap tides 3½ feet.

During the last fiscal year the landing slip on the east side of the wharf, which had been damaged during a storm, was repaired. Some of the planking being broken or removed was replaced.

The expenditure amounted to $67.

NOTRE DAME.

The village of Notre Dame is situated on the west side of Lake Témiscouata, on the Témiscouata railway, about midway between River du Loup and Edmunston, in the county of Témiscouata.

It is the centre of an extensive lumber trade; two steamboats and numerous other vessels are plying over the lake during the season of navigation, which does not usually close before the beginning of January.

Lake Témiscouata is 30 miles long, the width varies from 1½ to 3 miles.

In order to provide landing accommodation on both sides of the lake, two small piers of open faced cribwork were commened at Notre Dame du Lac during the month of October, 1900; one on the west shore, opposite the church, and the other on the east side. The expenditure during that year was of $1,068.37.

In 1901 these piers were raised 5 feet at the outer ends and brought level to the shore ground; they were filled with stone ballast and planked over with spruce deals.

Stairways were provided for landing at low water stage. The two piers were also sheathed on all sides.

The amount expended in that year was $1,185.72.

During the fiscal year 1902-03 the sum of $1,124.72 was expended in building a close faced extension, 30 by 25 feet and 17 feet high, to the pier on the west side of the lake.

The total expenditure, since the beginning of the two works, has been $3,378.81.

PERCÉ.

Percé, the shire town of the county of Gaspé, is situated on the Gulf of St. Lawrence, 36 miles from Gaspé Basin. The harbour consists of two small coves called the north and south cove.

In 1888-89 a landing pier was constructed in the south cove. Owing to the difficulty of approaching the pier in stormy weather, on account of the foul ground in the vicinity and the poor shelter it afforded, the department decided to build a landing pier in the north cove. In the month of April, 1900, a contract was awarded to Messrs. Heney & Smith, of Ottawa, for the construction of a pier 670 feet long, 20 feet wide on a length of 260 feet, and tapering to a width of 29 feet at the outer end, which stands in a depth of 13 feet at low water spring tides. The structure is built of close-faced timber cribwork throughout, filled with stone and sheathed on the east side with hardwood planks, 6 inches thick.

At the end of the fiscal year 1902-03 the work was nearly completed, only 120 feet of sheathing remaining to be done. The expenditure during the fiscal year was $4,945.02.

PETITE RIVIÈRE (STE. ANNE DE MONTS).

Petite Rivière, Ste. Anne de Monts, in the county of Gaspé, empties into the St. Lawrence at St. Anne de Monts, 108 miles below Rimouski.

During the fiscal year 1902-03 a sand bank obstructing the entrance to the river was removed, and a timber protection was built to keep the channel opened.

The amount expended was $128.36.

. PAPER No. 19

PHILLIPSBURG.

illage of Phillipsburg is situated on the east shore of Missisquoi bay, Lake , in the County of Missisquoi.

ruction.—On July 29, 1895, a contract was entered into for the construction f at that place, the municipality having subscribed $4,000 towards its cost. was completed in 1897 at a cost of $11,142.89. It consists of a breakwater ock, 120 feet long and 25 feet wide, of a trestlework approach 302 feet long t wide, and of a stone and earth embankment 285 feet long and 30 feet wide h side slopes of 1½ to 1. The outer face of the breakwater is 17½ feet above of the bay, and stands in 7½ feet of water at extreme low water.

rs.—The embankment was considerably damaged by ice and high water in 7. It was thoroughly repaired during the year 1898, and the ballast chambers outer face of the breakwater were filled with stone ballast, at a cost of $711.79. pril and May, 1903, the flooring of the head block and trestle approach being broken, were renewed; some repairs were also made to the front sheathing stone embankment at a cost of $580.57.

otal amount expended on this work is $12,928.15, of which $11,635.79 was s and construction, and $1,292.36 for repairs.

ork is now in good condition.

POINTE À ELIE.

e à Elie is the extreme south-easterly point of Allright island, 2 miles east use Harbour Catholic Church.

teamer 'Amelia' calls at Pointe à Elie for mails, and freight and for shelter rth-easterly gales.

onstruction of a landing pier and breakwater will give here the best of shelter rms, and specially from easterly gales that prevail in the spring.

g the fiscal year 1902-3 a length of 115 feet by 22½ feet wide of the pier pro- ilt, 850 feet of roadway, from 25 to 50 feet wide, and of an average height of also built of stone with a timber face held in place by walings, posts and

of 24 by 94 feet is being built.

nount expended during the fiscal year was $8,058.40.

POINTE AUX ESQUIMAUX.

aux Esquimaux, in the united counties of Chicoutimi and Saguenay, is the northern shore of the River St. Lawrence, 525 miles below Quebec.

aux Esquimaux is the chef-lieu of the north shore. It contains one Ro- lic church, one convent, an hospital, three stores, &c. It is one of the most trading posts for the traffic of fish, furs and oil.

harf purchased by the government in 1895 had a length of 125 feet and a 0 feet. In 1895-6 it was lengthened 60 feet by the construction of a block eet and 42 feet in height, connected with the old work by a platform 30 feet The wharf is now 185 feet in length, 30 feet wide, and has a depth of water r end of 24 feet at low water.

g the fiscal year 1902-3 a block of 30 by 30 feet, and 50 feet high, was built in water, 15 feet from the outer end of the wharf, and connected thereto by 3 by 10 inches and 3-inch tamarack deals.

g tides rise 5 feet, neap tides 3 feet.

mount expended during the year was $1,598.17.

POINTE FORTUNE.

Pointe Fortune, a post village in Vaudreuil county, is situated on the south shore of the River Ottawa, 7 miles from Grenville, and 45 miles north-west of Montreal. It contains two churches, two stores, 2 hotels, &c. It is the terminus of a branch line of the Canadian Pacific Railway to Rigaud.

In order to better accommodate the traffic by water, the Crown purchased from Mr. W. Brown a wharf 224 feet long, parallel with the shore, together with two rights of way, one at each end of the wharf, connecting with the public road. These roads are respectively 130 and 120 feet long by 18 and 20 feet wide, and a strip of land between the roadways, 158 feet long by 50 feet wide, 80 feet from the public road and adjacent to the wharf, was also purchased, to be used as a cattle yard—the whole for the sum of $1,000.

The top of the structure, which was in a bad state of decay, has been removed down to 1 foot below low water on a width of 10 feet, and the wharf rebuilt on sound foundations, with close-faced cribwork, well ballasted with stone. The new work is 19 feet high for the upstream 100 feet of its length, thence sloping upward to a height of 13 feet in the next 40 feet, and level for the remaining 84 feet. The wings at both ends are 25 feet long, joining the high ground of the shore. The outer face is built to a batter of 1 in 12, and the upper and lower corners are protected with steel boiler plates ⅜ inch thick. The top of the wharf, for a width of 12 feet from the outer face, is covered with 3-inch planks.

The work was carried out by day labour; commenced in October, 1902; open to traffic in May, 1903, but not entirely completed on June 30, 1903.

The expenditure on this work at the end of the fiscal year was:

Purchase price	$1,036 80
Construction	3,999 71
Total	$5,036 51

POINTE ST. PIERRE.

Point St. Pierre, county of Gaspé, is situated at the western entrance of Gaspé bay, 21 miles from Gaspé Basin and 15 miles north of Percé.

In order to afford shelter to fishing boats during easterly winds, and provide deep water berths along the inner face for large schooners, the department decided to construct a wharf at this place.

In September, 1902, a contract was entered into with Messrs. Heney and Smith, of Ottawa, to build a wharf 420 feet long ,22 feet wide on top and 28 feet wide at the outer end which stands in a depth of 15 feet at low water spring tides.

The wharf is built of close-faced timber cribwork, filled with stone and sheathed on the seaward face with hardwood planks 6 inches thick. Spring tides rise 5 feet.

At the end of the fiscal year 1902-03 only part of the work had been built. The amount expended during the year was $3,735.25.

PORT DANIEL.

The village of Port Daniel is on the north shore of the Baie des Chaleurs, in the county of Bonaventure, about 75 miles east of Campbellton, N.B., and 45 miles west of Percé.

Spring tides rise 6 feet; neap tides, 3 feet

The wharf at this place is 425 feet long, and reaches to a depth of 13 feet at low water spring tides.

During the last fiscal year the sum of $200 was expended on repairs to the freigh shed, also in planking over the old flooring on the middle of the roadway, with 2-inch planks, on a length of 350 feet.

PER No. 19

QUEBEC HARBOUR.

afford more accommodation for ocean steamers in the harbour of Quebec, decided in 1902 to build an extension, 462 feet long, in a northerly direc- sent breakwater built many years ago on the river front of the harbour. 03, a contract was awarded to Messrs. Duseault and Lemieux, of Lévis, uction of the extension. The new work will have a depth of 42 feet at s outer face; it is built of timber cribwork, filled with stone up to 3 feet er spring tides, and founded on a bed of rubble stone 4 feet thick; he cribs, the superstructure will be built of concrete for its total height will reach to 6 feet above high water spring tides. The back of the cribs uperstructure will be filled to coping level with dredged materials, form- ment which will increase the available top area by about 166,200 super- e back of the embankment will be protected by a retaining wall built of work, sheathed on the outer face.

of the fiscal year 1902-03 one of the cribs, 155 feet long, had been built 12 feet, 150 feet of cribwork retaining wall had been sunk, 5,000 cubic ; deposited, and a considerable quantity of materials delivered. The the contractors on June 30, 1903, was $18,831.65.

RICHMOND.

an incorporated town in Richmond county, is on the St. Francis river, f the Grand Trunk Railway; it is 76 miles from Montreal. It contains nty buildings, 4 churches, 26 stores, 3 hotels, 1 grist mill, 1 branch bank, es. It is connected with Melbourne on the west side of the river by an

e spring freshets, almost yearly, the town of Richmond is flooded to a feet, owing to ice jams on the River St. Francis, at a place called 'The rder to prevent these ice jams and floods, which have caused considerable t years, it was decided to build four ice breakers above 'The Narrows.' 902, a contract was entered into with Mr. William Ross, for the construc- r ice breakers for the sum of $10,317.00.

e ice breakers, situated above the municipal iron bridge, was completed 1903. It proved very effective; the bridge, which was carried away the y the ice and rebuilt, suffered no damage, and there was no overflow of

of the fiscal year the three other ice breakers were commenced, but not

diture to June 30, 1903, was $5,832.84.

RIVIÈRE DES VASES.

s Vases is in the county of Témiscouta, 125 miles below Quebec and 6 sle Verte.

ass industry, which is the chief trade of the place, having grown consid- o to provide better landing accommodation for the people living on the , the construction of an open faced cribwork pier was begun along the f the river. During the year 1900 a section 100 feet in length, 30 feet t high at the outer face, was commenced, but not completed; the expen- 9.63.

e work begun the previous year was finished, and an addition of 32 feet work was built at a cost of $498.98.

e fiscal year ended June 30, 1903, the part already built which had settled, nd a further extension, 35 feet in length, of the same width and height as

that built previously, was constructed, the expenditure being $498.05; a claim for dam age to property having been made, the sum of $10 was paid in settlement, forming total expenditure since the beginning of the work up to June 30, 1903, of $1,506.66.

RIVIÈRE NOIRE.

Rivière Noire is in the parish of St. Jean de Matha, Joliette county.

In order to prevent the continuous landslides and to give better facilities for th drive of logs, the wharf or barrage, built some years ago on one of the channels at th head of a little island, was removed and rebuilt on the other channel. It has prove effective. and has given satisfaction.

The work was commenced in October and completed in November, 1902, at a cos of $247.96.

RIMOUSKI.

Rimouski, the chief town of the county of the same name, is situated on the sout shore of the St. Lawrence, 180 miles below Quebec; it is an important station on th Intercolonial railway, with a population of nearly 2,000. A large quantity of lumber shipped from this place for the European market. It is also the point where the trans fer from the steamers to the cars of European mails and passengers is effected durin the season of navigation.

Spring tides rise 15 feet; neap tides, 8½ feet.

Owing to sea worms and also to decay, the face timbers at the outer end of th Rimouski wharf were weakened and carried away, causing that part of the structure sink down some three feet. The stone ballast has fallen out through the opening left b the broken timbers to such a height as to become dry at low tide, forming a seriou obstruction to navigation.

During the fiscal year 1902-03 a diver was employed to remove the obstructio about 450 cubic yards of stone were hauled up and put into the wharf at places whe ballast was needed. In the meantime, the slip on the western side of the wharf wa repaired. The flooring and stringers on a length of 160 feet were completely renewe Some repairs have also been done to the top planking over the whole length of th wharf, and numerous iron bolts projecting out of the face timbers were driven in.

These works were carried out at a cost of $1,100.81.

During the month of April, 1903, the coal shed erected upon the head of the wha was thoroughly restored, and the sum of $210.70 expended for that object, forming total expenditure for the fiscal year ended June 30, 1903, of $1,311.51.

RIVIÈRE BLANCHE.

The village of Rivière Blanche. or St. Ulric de Matane, county of Rimouski, situated on the south shore of the St. Lawrence, 9 miles west of Matane and 25 mil east of Métis. It contains large stores, a creamery and sawmills; a considerable qua tity of lumber is shipped from this place.

During the fiscal year ended June 30, 1903, to complete the repairs undertaken t previous year, the following works were effected, viz. : The flooring, stringers and c timbers were renewed on a length of 150 feet; the flooring on the north and east part the outer block having been carried away by waves on a surface of 2,000 square fe was replaced with most of the stringers, a middle pathway, four planks wide has be placed over the whole length of the wharf, 550 feet, and minor repairs were also do to the structure.

The sand having accumulated to a great extent inside the outer block, some wo was done to remove part of it, and a depth of water of 2 feet has been gained thereby.

The amount expended during the fiscal year is $750.

APER No. 19

RIVIÈRE DU LOUP.

lu Loup, or the town of Fraserville, is the chef-lieu of the County of Té-
t is situated on the south shore of the St. Lawrence, 114 miles below Que-
thriving little town of nearly 4,000 inhabitants, which contains several
s, including two pulp mills.
ière du Loup point, where the wharf is located, is distant 2 miles from
is one of the best known and most frequented summer resorts of the St.

ides rise 19 feet, neap tides, 12 feet.
the action of the ice and waves, also the considerable wear and tear due
mber traffic, annual repairs are required on this wharf.
the fiscal year 1902-3 the following works were performed:—Repairs to
e north-west side of the wharf; 270 feet of spruce, 12 by 12 inches, were
the face timbers broken by the ice; 2,594 feet of timber, 12 by 10 inches,
ployed for the renewal of the cap timbers, which were decayed and carried
ing 1,591 feet long, 3 feet high, was built with spruce timber 6 inches
ainted, to replace the one broken by the waves during a heavy storm; the
he west side of the wharf has been repaired, and the angle sheathed on a
0 square feet, with spruce timber 9 by 6 inches, and secured by iron straps;
f spruce timber 24 feet in length, and 9 by 7 inches, have been placed to
cings against the wear of the scows carrying timber; 8 mooring posts were
ew the broken one, and 4 ladders added where needed. Lastly, 13,500 feet
deals have been used to repair the top flooring.
rks were done by day labour, during the months of July, August and Sep-
cost of $2,969.21.

ROBERVAL.

n of Roberval, in the County of Chicoutimi, is built on the east side of
iatchouanish, near its mouth, on the south shore of Lake St. John, 200
ast of Quebec city, and is the northern terminus of the Roberval branch
ec and Lake St. John Railway, which taps the main line at Chambord

he fiscal year 1902-3 a block of cribwork 60 feet long, 15 feet wide, and 25
s sunk on the southern side of the wharf at the outer end, thus making the
wider on a length of 60 feet. From the inner end of the new cribwork to
distance of 340 feet, a trestlework was built for the railway track which
nd Lake St. John Railway intend to lay as far as the outer end of the
bents of the trestlework are 8 feet apart, built of 12 by 12-inch spruce
2 by 12-inch stringers on top to receive the sleepers.
ount expended during the fiscal year was $4,577.11.

SOREL.

tles of the pile wharf were begun in August and completed in November.
erstructure of the cribwork was completed in 1902 to within 5 courses of
h were finished in 1903.
athing of the cribwork was completed in June, 1903.
g was commenced on April 13, 1903.
ng at the end of the fiscal year covered three-fourths of the required area.
excavation not being proportionately advanced a third dredge was added
h the work before the end of the present season.

During the present fiscal year the expenditure was:

On contract	$139,324 24
On extra work	5,455 85
Total	$144,780 09

The chief items being:
Excavation—397,300 cubic yards.
Iron in bolts, &c.—192,970 lbs.
Stone filling—27,700 cubic feet.
Timber of all kinds—185,700 cubic feet.

ST. ALEXIS.

St. Alexis is on the south side of Ha! Ha! Bay, River Saguenay, about 63 miles from its mouth.

During the last fiscal year an extension to the shore wharf, 150 feet in length, 2 feet wide, and 21 feet high at outer end, was built. The structure is built of open-faced cribwork, with 11 by 11-inch face timbers, fenders at every 10 feet; 3-inch tamarac deals were used for the flooring; the work was fully ballasted.

Spring tides rise 13 feet, neap tides 11 feet.

The expenditure for the fiscal year is $3,994.71.

ST. ALPHONSE DE BAGOTVILLE.

St. Alphonse is at the head of Ha ! Ha ! Bay, on the southern shore of the River Saguenay, 66 miles from its mouth.

A landing pier was built here, prior to Confederation, at a cost of about $3,200.

During the fiscal year 1902-3 general repairs were made to the flooring, the shed and new fenders were placed. The shed was roofed with sheet iron. The amount ex pended was $1,500.

Spring tides rise 18 feet, neap 11 feet.

ST. ANDRÉ.

The village of St. André, in the county of Kamouraska, is situated on the south shore of the St. Lawrence, about 15 miles west of River du Loup, and 100 miles below Quebec.

The place is somewhat frequented as a summer resort; it contains a foundry and an important threshing machine factory.

Spring tides rise 19 feet; neap tides, 12 feet.

The wharf owned by the department at St. André consists of an earthen embank ment 850 feet long, on a mean height of 6 feet, and nine piers connected by platforms o 30 foot spans.

A head pier, 25 by 25 feet and 15 feet high, was built in 1900, and the earth approach was repaired. The expenditure for that year was $4,048.79.

In 1901 a sum of $300 was expended in repairing the approach.

During the fiscal year ended June 30, 1903, the addition to the wharf, which ha not been finished in 1900, was completed; the crib has been brought to the level of th old wharf, and connected to it with a platform of 26 feet span, supported by a small pie 12 feet wide. A middle pathway, 4 planks wide, 76 feet long, was placed over the to planking. The repairs and improvements to the earth approach to the wharf have bee continued; a length of 155 feet was thoroughly repaired, the expenditure being $999.88

The whole amount expended since the year 1900, inclusively, is $5,348.67.

STE ADELAIDE DE PABOS.

ide de Pabos, commonly called Little Pabos, is an important parish in Gaspé.

n order to afford shelter to the fishing boats of the locality, a breakwater feet long, 24 feet wide at bottom and the top of the seaward face sloping ght of 6 feet, leaving the top of the breakwater 18 feet wide.

o prevent the heavy seas from rolling over the breakwater, the top was ing the last fiscal year.

consisted in removing the sloping face on the sea side, and building endicular wall 12 feet wide from the level of the foot of the old slope on h of 200 feet and 9 feet high, or 3 feet higher than the original top, the work was planked over with 6-inch spruce deals.

timbers were put in to replace broken ones on a height of 10 feet and feet; stone ballast was added where needed; the whole of the outer face ter was sheathed with black birch, 6 inches thick and the corners secured aps, 14 feet long.

nt expended was $2,925.47.

STE. ANNE DU SAGUENAY.

du Saguenay, in the county of Chicoutimi, is situated on the north shore y river, opposite Chicoutimi, 72½ miles above Tadousac; its population is the church and post office, the parish contains eight stores, four cheese iekiln, a brickyard and a pottery. The only market for the produce of is section of the north shore of the river, is Chicoutimi.

es rise 15 feet; neap tides, 8 feet.

e fiscal year 1902-03 a movable slip for the wharf was built, part of the newed and a waiting room was partly built.

diture was $1,339.07.

STE. FAMILLE, ISLAND OF ORLEANS.

e, is situated on the north shore of the Island of Orleans, in the county y, and 17 miles below Quebec.

es rise 19 feet; neap tides, 13 feet.

e last fiscal year an extension, 60 by 60 feet and 30 feet high, was built he wharf. The structure is built of timber cribwork filled with stone landing slip at the outer end, the work was done by day labour.

portions of the wharf were also repaired; fenders and part of the sheath-ed. The amount expended during the fiscal year 1902-03 was $4,402.14.

ST. FRANÇOIS, ISLAND OF ORLEANS.

is, in the county of Montmorency, is situated at the lower end of the ns, 6 miles below the village of St. Jean, and 24 miles below Quebec. nds to both shores of the island and about half way to St. Jean. Spring et; neap tides, 13 feet.

ears ago a wharf was built on the north shore of the island; the struc-le only at high tide, and is of little avail for the shipping of the farm s part of the island; further, no regular coasting vessel frequent the

ew to afford shipping and landing facilities, it was decided to build a e quarter of a mile above the church of St. François, on the south shore ine of market steamers is established.

On February 7, 1903, a contract was entered into with the W. J. Poupore Company to build an isolated block of close-faced timber cribwork, 50 feet long and 80 feet wide, on the channel face, sunk in a depth of 12 feet at low water spring tides, the block stands at a distance of about 300 feet from low water mark, and is intended to be connected with the shore at a future date.

At the end of the fiscal year 1902-03 about one-third of the structure had been built, and the amount paid was $4,575.89.

Urgent repairs were made to the planking of the wharf on the north side, which amounted to $341.66.

ST. FULGENCE.

St. Fulgence, otherwise called l'Anse aux Foins, is a village in Chicoutimi county, on the north shore of the Saguenay river, 10 miles below Chicoutimi. It contains one church, four stores and two sawmills; population of parish, 1,200.

Spring tides rise 20 feet; neap tides, 13 feet.

In 1897-98 the department commenced the construction of an isolated block of close-faced cribwork to give shelter to schooners and bateaux employed in loading steamers at Anse aux Foins. This block is 60 feet long and 30 feet wide, sunk in 10 feet of water at low water spring tides, at a distance of about 2,500 feet out from high water mark.

During the fiscal year 1902-03 the corners of the block were sheathed with boiler plate, a shed was built, and repairs to the planking and to the sheathing were made.

The expenditure for the fiscal year was $747.86.

STE GENEVIÈVE.

Ste. Geneviève, a post office and a parish of Jacques-Cartier county, is on Rivière des Prairies, and on the Grand Trunk and Canadian Pacific railways, 3 miles from Beaconsfield and 5 miles from Pointe Claire. The village contains one church, one convent, two hotels, butter and cheese factories, one telegraph office and fourteen stores. There are excellent mineral springs in the vicinity.

During March, 1903, the sum of $135.45 was expended to effect some repairs to the pier at that place, four stringers were renewed and the floor was repaired.

ST. IRENÉE.

This village is situated on the north shore of the St. Lawrence, in the County of Charlevoix, 78 milts below Quebec, and 5 miles west of Murray Bay wharf.

Spring tides rise 19 feet, neap tides 13 feet.

In the spring of 1902, during a heavy storm, the terrace, at the inner end of the wharf, was completely washed away and disintegrated. In order to provide for a more substantial work, this approach was rebuilt with close-faced cribwork, thoroughly ballasted, and backed up on the east side with large stones, which were put after having taken away a thickness of 3 feet of sand, so as to obtain a hard bottom. Minor repairs were also done to the wharf. The work was done by day labour, and amounted to $600.

The contract for the extension of the wharf, awarded to Mr. Trudel, was completed by the end of June, except that part of the sheathing which he refused to do. This was done by the Department of Public Works and charged to the contractor. The extension consists of close-faced cribwork 80 feet wide, 35 feet long on the east and 45 feet long on the west side, and 43 feet high, sunk at the end of the wharf in a depth of 18 feet at low water spring tides.

The old slip was taken out and placed at the end of the new extension.

PER No. 19

diture for the fiscal year 1902-3 was:

sion to the wharf	$6,340 25
rs	600 00
	$6,940 25

ST. JEAN, ISLAND OF ORLEANS.

n, county of Montmoreny, the flooring of the wharf was partly repaired
B.M. of 3-inch deals, at a cost of $110.26.

ST. JEAN PORT JOLI.

e of St. Jean Port Joli, in the county of L'Islet, is situated on the south
Lawrence, 60 miles below Quebec.
es rise 21 feet; neap tides, 13 feet.
f has a length of 454 feet, consisting of a shore part or approach, com-
connected by platforms, 180 feet long and 18 feet wide; a middle section
gth, open-faced cribwork and a head block 100 feet long and 38 feet wide.
the outer face being 26 feet, with a depth of water 5 feet at low water

e fiscal year 1902-03 the sum of $818.72 was expended in renewing the
was totally worn out, the cap timbers were all renewed, and seven moor-
n. To strengthen the platforms, timber supports were put underneath.

ST. JEROME.

e is a village situated on the south bank of Lake St. John, 24 miles east
Besides the church, post office, telegraph and railway station, the parish
al stores, three cheese factories and two sawmills.
e fiscal year 1902-3 a block 60 feet in length by 25 feet wide, and 27 feet
in 7 feet at low water and 110 from the end of the present wharf, to
ended to be connected by the construction of two piers in the intervening
ock is built with a slip at the outer end, sheathed with 8-inch hardwood
lly ballasted. The amount expended was $2,908.48.

ST. LAURENT, ISLAND OF ORLEANS.

nt, in the County of Montmorency, is situate on the south side of the
ans, 10 miles below Quebec. The place is somewhat frequented as a sum-

les rise 20 feet, neap tides 13 feet.
nth of June, 1902, a contract was entered into with Messrs. Dussault &
he construction of an addition to the wharf, 70 feet long by a width of 60
rk has been performed in the course of the past fiscal year; the contract
598. In order to facilitate the landing at every stage of the tides, the
is furnished with a slip moved automatically by the action of the
-iron pontoons, placed in chambers built in the body of the wharf. The
ons are connected together by means of four wire cables passing around
e bottom of the chambers, and around heavy pulley blocks secured to
op of the work. The slip was placed in position in the month of May last,
good working order.
he month of March, 1903, an agreement was made with the contractors
ed and the lighthouse, which were standing on the old part of the wharf,
em on the new extension, the top part of the lighthouse being placed on

the roof of the shed. This work was performed in the months of March and April, at a cost of $1,200.

In the course of the month of June, the sum of $357.90 was expended in doing some additional work required; $918.08 were paid for wages to the inspector of the contract work, and for the purchase of winches, wire cables and pulley blocks. The total expenditure for the fiscal year 1902-3 was $19,370.32.

ST. MATHIAS.

St. Mathias, a post village and parish in Rouville county, is on the Richelieu river 3 miles from Richelieu. The village contains one Roman Catholic church, one store one sawmill. Population of the parish, 800.

It had been decided to build a landing pier at that place in 1901, but owing to some difficulty in the purchase of the right of way and site of the proposed wharf nothing was done until 1902, except the purchase of building materials that were procured at a cost of $2,263.43.

In October, 1902, the purchase from the church wardens of the site and right of way of the proposed wharf, with a certain piece of land of an area of 5,200 feet, to be used as a cattle yard, for the sum of $500, having been completed, the work was commenced and completed in June, 1903.

The structure is a close-faced cribwork block of a length of 90 feet by a width of 20 feet for a length of 60 feet from the up-stream end, and a width of 35 feet for the remaining 30 feet, and a stone embankment of a length of 135 feet, from the shore to the head block, by a width of 35 feet, with slopes 1 in 1 on both sides, and a layer of 1 foot of gravel and sand on top. The outer face of the head block is 21 feet high, and stands in 10 feet at the low stage of the water. The up-stream end of the head block is sloped 1 in 1½, and sheathed with pine timber 8 inches in thickness.

The work was carried out by day labour. The expenditure, during the fiscal year 1902-3, was $2,497.26.

The total expenditure on this work was $4,726.17.

ST. MICHEL.

St. Michel is on the south shore of the St. Lawrence, in the county of Bellechasse, 15 miles below Quebec. The site of the village is picturesque, and the place is somewhat frequented as a summer resort. A coasting steamer calls daily at this place for the traffic in farm produce from the surrounding country. Spring tides rise 21 feet; neap tides, 13 feet.

The heavy repairs to the wharf, commenced in 1900, have been continued during the past fiscal year; the following works were executed. The superstructure was renewed for a length of 575 feet, on a mean height of 7½ feet on half the width of the wharf. The top planks were renewed over a surface of 16,000 square feet with spruce deals 3 inches thick, and cappings renewed on a length of 1,300 feet; 62 fenders from 12 to 20 feet long, and 6 mooring posts have been placed. The western face of the outer block was sheathed over a surface of 580 feet with oak and elm planks 5 inches in thickness and 250 loads of stone ballast were added. The kinds of timber used were cedar and pine.

The work was done by day labour during the months of July, August, September and October, 1903, at a cost of $3,997.53.

ST. NICHOLAS.

The village of St. Nicholas, in the county of Lévis, is on the south shore of the St. Lawrence, 14 miles above Quebec.

Spring tides rise 18 feet, neap tides, 12 feet.

PAPER No. 19

y years a small steamer has called at this place for the considerable traffic uce derived from the fertile surrounding country. The pier consists of an) feet long, a section of 280 feet in length and 20½ feet wide, and a head t long, widening from 21 to 62 feet at the outer face. The depth of water end is 10 feet at low water spring tides.

pring 1901, during the ice shove, the outer part on a length of 60 feet was nd carried away. In the following season a sum of $1,271,89 was expended emoval of the débris, and the purchase of some timber in view of the recon- the part carried away. Subsequently, it was decided to ask for tenders, was awarded to Messrs. Dussault and Lemieux, of Lévis. The work was ring the first part of the fiscal year 1902-03, at a cost of $7,475.

ork was also done by day labour, which consisted in placing a wheel guard e wharf, at a cost of $304.47. In order to extend the government's ground y of the wharf, which had been found too narrow to accommodate the great ehicles at the time of arrival and departure of the boat, a tract of land was r the price of $250.

enditure for the fiscal year ended June 30, 1903, was $7,407.83.

ST. SIMEON.

iméon, in the county of Charlevoix, the repairs of the isolated block under- ar, have been completed.

ern face has been sheathed with spruce 10 by 10 inches, and 25 feet long. ces were repaired by closing holes existing in the face timbers, and replac- s of sheathing broken.

rway, which had been badly damaged, has been thoroughly repaired. Spring feet, neap tides rise 12½ feet.

enditure for the fiscal year 1902-03 amounted to $598.92.

TABLEAU (DESCENTE DES FEMMES).

(Descente des Femmes), is a new settlement on the north side of the River out 61 miles from its mouth. In view of aiding the colonization of that e Saguenay, which has no other communication than by water, the sum s voted at the session of Parliament of 1902 for the construction of a

he fiscal year 1902-3 a block, 40 feet in length by 30 feet in width, with 0 by 25 feet, and two piers of 20 feet in length by 25 feet, placed 25 feet k and from each other, were commenced. The outer block was sunk in 18 at low water spring tides, and stands 41 feet high. The block and the ilt of close-face timber, the piers are built of round logs open-face, and e sheathed.

nd tamarack timbers were used; the structure is ballasted with stones on t.

ides rise 18 feet; neap tides, 11 feet.

was done by day labour at a cost of $5,035.71.

TADOUSAC WHARF.

, or l'Anse à l'Eau, the chef-lieu of the County of Saguenay, is a well- ng place, on the north-eastern side of the Saguenay river, about 5 miles uth, which is much frequented by tourists and health-seekers during the n. The village contains three churches, one of which is the oldest church da, having been erected in 1747, four hotels and stores, a telegraph

office, post office and many handsome villas; a fish hatchery has also been established here by the Department of Marine and Fisheries. Population of the parish, 2,500.

Some 50 years ago, or more, the lumbering firm of Price Brothers & Co., of Chicoutimi, built at Anse à l'Eau, which constitutes the harbour of Tadousac, a wharf for their own use and convenience, of round logs and slabs, and partly faced the same with square timber and ballasted the work with stone. This wharf had a total length of 366 feet, and a general width of 26 feet, excepting a block at the west end, which measured 4 feet by 50 feet by 29 feet in height. The depth available along its outer face at lowest water being about 7½ feet. In the absence of any other landing, this wharf was not used alone by the firm who built it, but was also taken advantage of by the Richelieu Company, as well as the general public.

The structure having become too dilapidated to be of further service for the public the federal government decided to carry out the works of repairs required to permit of the wharf being used for general shipping and landing purposes as in previous years.

During the fiscal year 1902-3 the roadway of the approach was repaired. The sheathing of the two western corners of the wharf were renewed with hardwood timber; the shed repaired and painted, at a total cost of $1,062.10.

Spring tides rise 17 feet; neap tides, 10 feet.

TADOUSAC—FISH HATCHERY.

During the fiscal year 1902-3 the dam of the fish pond was extended a further length of 60 feet, and the old portion sheathed with 3-inch tamarack deals; the plank walk from the wharf to the pond was repaired, and a small kiosk was built on a pier sunk in the pond, together with a plank approach thereto. The work was done by day labour at a cost of $928.62.

THREE RIVERS.

The city of Three Rivers is situated on the northern bank of the River St. Lawrence, at the mouth of the River St. Maurice, 71 miles below Montreal and 68 miles above Quebec.

In the month of June, 1902, a contract was entered into with Mr. Randolph MacDonald, of Toronto, for the construction of a deep water wharf with a mooring face of 1,968 feet on the river side, with a return of 24 feet to connect the lower end of Dean's wharf.

The contract includes the construction of an ice-breaker built of timber cribwork at the upper end of the wharf, as a protection against the effects of the ice. The ice-breaker is 50 by 100 feet and 53 feet high, or 23 feet above low water.

At the end of the fiscal year part of the foundation for the ice-breaker had been excavated and the bottom of the timber structure had been built to a height of 11 feet; nothing had been done towards the construction of the wharf proper, except delivering part of the timber.

The expenditure during the fiscal year was $49,914.21.

PROVINCE OF ONTARIO.

ALGOMA MILLS.

Algoma Mills is situated on the north shore of the north channel of Lake Huron, in the district of Algoma, and is a station on the Canadian Pacific Railway. An extensive lumbering business is done at this place. Some 75,000 tons of coal are annually shipped to this harbour by boat.

On May 8, 1902, authority was given to dredge the channel in order to allow vessels to load and unload at the pier. The plant of Messrs. Eddy Brothers, Blind River, was

PAPER No. 19

the work required, and it was all completed between May 12 and June 10
ear. The dredge removed 10,780 cubic yards of material.
nditure for the fiscal year was :—

Eddy Brothers for use of plant, dredging	$2,118 00
Inspector's wages	98 00
	$2,216 00

BARRIE.

situated in the county of Simoce, 66 miles north-west from Toronto, on
bay, Lake Simcoe. Population, 5,600.
st session of parliament, the sum of $3,000 was appropriated for the con-
wharf at that place, and authority was given to do the work by days'
he end of the fiscal year part of the lumber for this structure had been

ure for the fiscal year 1902-3, $1,165.30.

BAYFIELD.

a village in the county of Huron, is situated at the mouth of the river
name, which empties into Lake Huron 12 miles south of the town of
contains one grist and sawmill.
mber 27, 1901, a contract was let to Mr. James Clark, of Goderich, to con-
ension to the south pier, 120 feet in length, 30 feet wide, and to dredge
cribs to 16 feet below low water. Active operations were not commenced
902, and the first crib was not placed in position until the middle of
in only about 14 feet of water. The second or outer crib was placed in
n a less depth, and was washed ashore by the fall storms, but afterwards
th the lower tier of timber torn off. On November 7, 1902, the work was
stopped for the winter. Nothing further has been done in the way of
aterial, or work performed since the date above mentioned.
ures for the fiscal year 1902-03: Paid inspector's wages, $366.55.

BIG BAY.

is situated in the county of Grey, at the entrance of Colpoy bay, on the
about 15 miles north of Owen Sound harbour. There is a small village
nd the trade is a limited one in timber, cordwood and poles.
st session of parliament the sum of $5,000 was appropriated for repairs to
Big Bay, and on June 19, 1902, authority was given to expend the amount
work by days' labour. Owing to the difficulty in obtaining labour, opera-
t commenced until October, and the work was finished in November. It
eplanking the deck of the wharf a length of 355 feet, renewing stringers,
uired. Some 22,000 feet B.M., 3-inch beech plank, 1,500 feet B.M., pine
on bolts and spikes were used.
ure during the fiscal year 1902-03, $467.94.

BLIND RIVER.

er is a village situated on the north shore of the north channel, Lake
district of Algoma. It is a station on the Canadian Pacific Railway.
bering operations are carried on at this place.
ary 11, 1903, a contract was let to Mr. Robert Grant, of Toronto, to con-
wharf, 450 feet in length, 20 and 30 feet wide, with a stone and gravel

approach 150 feet in length, 20 feet wide on top. Work was commenced in April, and it is expected that the structure will be all completed in July.

Expenditure for fiscal year 1902-03, $5,364.54.

BOWMANVILLE.

Bowmanville, or Port Darlington, is situated on the north shore of Lake Ontario, County of Durham, 43 miles from Toronto by rail on the Grand Trunk division of the main line between Toronto and Montreal. Population, 3,500.

At the last session of Parliament the sum of $4,000 was appropriated to complete the repairs to the breakwater at this place, and on June 19, 1902, authority was given to expend the amount appropriated, and to do the work by day labour. Operations were commenced on July 23, and were continued until November, 1902, when they ceased for the winter months, and were resumed in May, 1903. The work consists in rebuilding the superstructure of the breakwater, or the western pier, from low water up, a distance of 200 feet; also placing stone ballast in the cribwork of the eastern pier where required. In doing the above work some 97,867 feet B.M. pine, 680 lbs. iron and 57 toise stone were used.

Expenditure for fiscal year 1902-3, $4,009.07.

BRONTE.

Bronte is situated in the County of Halton, on the north shore of Lake Ontario 27 miles south-east of Toronto.

At the last session of Parliament the sum of $3,000 was appropriated for harbour improvements at Bronte, and on June 19, 1902, authority was given to expend this amount and to do the work by day labour. Operations were not commenced until August 7, owing to the difficulty in obtaining materials and labour. The work consists in building one crib on the outside end of the south pier 42 feet long, 16 feet wide and 9 feet deep, sunk on old crib bottom filled with stone, built of hemlock to the top of low water. Superstructure built on the south pier 265 feet in length, 2 feet high and 16 feet wide; 150 feet 2 feet high and 20 feet wide; 200 feet 2 feet high and 18 feet wide; built of white pine and filled with stone. Superstructure on outside end of east pier, 50 feet long, 4 feet high and 24 feet wide, built of white pine, filled with stone and decked. Superstructure on inside end of east pier, 40 feet long, 2 feet high, 24 feet wide; 100 feet 1 foot high and 24 feet wide, built of white pine and filled with stone and gravel, not decked.

In doing the above work the following material was used:—42,983 feet B.M. of pine lumber; 13,088 feet B.M. of hemlock; 2,860 feet B.M. of elm; 71 toise of stone; 2,894 lbs. of iron.

Expenditure for the fiscal year 1902-3, $3,050.01.

BRUCE MINES.

Bruce Mines is situated in Algoma district, on the north shore of Lake Huron, 45 miles south-east of Sault Ste. Marie.

The dredging of a basin in front of the government wharf at this place, ordered on April 10, 1903, and for which purpose Mr. C. S. Boone's dredging plant was engaged, commencing work on April 24, was completed on July 23 of the same year.

On August 12 authority was given to provide 5 buoys to mark out the channel and basin in front of the wharf.

Expenditure for fiscal year 1902-3, $5,159.

APER No. 19

BURK'S FALLS.

alls is situated in the district of Parry Sound, on the Magnetawan river
on on the Grand Trunk Railway, Northern Division. Population, 1,500.
he session of Parliament of 1902 an appropriation was voted for the con-
a wharf at this place, and on January 2, 1903, a contract was let to Mr
y to build a structure of pile trestle work, 300 feet in length and 25 feet
he work was commenced, but had not been completed at the end of the

ure for fiscal year 1902-3, $4,497.74.

BURLINGTON CHANNEL.

on channel, in the County of Wentworth, is simply a cut through a piece
which partly separates Lake Ontario from a large sheet of water called
ay, enabling vessels to reach the wharf at the city of Hamilton. Both
anal are lined with piers.
ast session of Parliament the sum of $50,000 was appropriated, in addi-
00 of the previous year, for repairs to the piers at Burlington channel
t was let on October 10, 1901, to Mr. James Clark, of Goderich, to recon-
perstructure of the west end of the south pier, and to protect the channel
piers with sheet piling. Operations were not commenced until June, 1902
ecember 9, when the contractor discharged all his men and stopped the
per cent of the work had been accomplished. Work was again resumed
03, and by the end of the fiscal year not more than 43 per cent of the con-
n accomplished. No timber has, so far been obtained for rebuilding the
e of the west end of the south pier.
g bridge staff were employed from July 1 to December 19, 1902, when the
ut out, and navigation ceased for the season, opening again in April, 1903
sumed duty. The auxilliary storage battery for operating the bridge is
d.
nditure for the fiscal year 1902-3 was $42,758.34.

CALANDER.

is situated on Eastern bay, Lake Nipissing, in the district of Algoma,
south of North Bay.
ast session of parliament the sum of $1,500 was appropriated for repairs to
this place, and authority to expend the same was given on June 19, 1902.
ssisted in repairing with pile bents, caps, stringers and flooring the shore
harf, a distance of 300 feet.
g the above work some 25,422 feet B.M. white pine, 20,587 feet B.M.
e and 12,000 lbs. iron bolts were used.
ture for fiscal year 1902-03 :—

erials, lumber, iron, &c.	$1,098 07
erintendence and labour	361 40
	$1,459 47

CHANTRY ISLAND.

Island, Southampton, is situated about 1¼ miles west-south-west from the
Saugeen river, Southampton in the county of Bruce, North riding.
the session of parliament of 1902, the sum of $3,300 was appropriated for
e breakwater at this place. Work was commenced on July 3, 1902, and
November 29 of the same year. The repairs executed consisted chiefly
the outer or northern side of the breakwater a length of 280 feet.

In doing the above work some 33,181 feet B.M. hemlock, 69,610 feet B.M. cedar, 27,614 feet B.M. pine, 4,600 lbs. iron bolts and spikes, and 27 cords of stone were used.

Expenditure for fiscal year, 1902-03:—

Materials, lumber, iron and stone	$2,328 00
Labour and superintendence	972 00
	$3,300 00

COBOURG.

Cobourg is an incorporated town of Ontario in Northumberland county, situated on the north shore of Lake Ontario, on the Grand Trunk Railway, 92 miles west by south of Kingston, 69 miles north-east of Toronto, and is a port of entry. It has several mills, foundries, breweries and a car factory. Population, 4,239.

At the last session of parliament the sum of $10,000 was appropriated for repairs to the piers and dredging at Cobourg, and on June 19, 1902, authority was given to expend $2,000 and on August 16, a further sum of $2,000, in all $4,000, by days' labour, to repair the centre pier and the Langevin pier. Work was commenced on July 7, and completed on September 24, 1902. It consisted in replanking and placing in new stringers where required on both piers.

In doing the above work, some 107,750 feet B.M., of cedar plank, 3,147 feet B.M., pine timber, 6,115 lbs. of iron bolts and spikes, and 52 toise of stone were used.

Expenditure for fiscal year 1902-03:—

Labour and superintendence	$1,122 77
Materials, lumber, iron and stone	2.876 68
	$3,999 45

COLLINGWOOD.

Collingwood is situated on the south side of the Georgian bay, township of Nottawasaga, county of Simcoe, 94 miles by railway from Toronto. It is the terminus of the Northern and Hamilton and North-western railways. There is an extensive trade in shipbuilding, grain and lumber and it is the starting point of steamers for Owen Sound, Sault Ste. Marie, Parry Sound, &c. Population, 9,000.

As constituted now the harbour is very large and commodious, being protected on the north and east sides by extensive breakwaters. Several small wharfs belonging to the town or to companies are built inside the area inclosed by these breakwaters.

During the session of parliament of 1902 an appropriation was voted for improvements in Collingwood Harbour. On August 29, 1902, a contract was let to Mr. C. S. Boone, of Toronto, to deepen the outer end of the entrance channel to 20 feet at low water, a width of 90 feet, which gives, with the 110 feet already deepened, a width of 200 feet. Work was commenced during the season of 1902, and by June 30, 1903, the plant had nearly completed the contract which calls for the removal of 26,277 cubic yards. Mr. Boone's plant removed 408 cubic yards of rock from the side of elevator, also 32,582 cubic yards of material from the harbour channel to Messrs. Charlton's mills.

Expenditure for fiscal year 1902-03, $85,129.24.

CORNWALL.

Cornwall, the chief town of the united counties of Stormont, Dundas and Glengarry, is situated at the mouth of the Cornwall Canal, on the River St. Lawrence, on the line of the Grand Trunk Railway, 67 miles south-west of Montreal, and 105 miles east of Kingston. It is a port of entry. The Cornwall Canal gives it excellent water privileges, which are taken advantage of by several large mills and factories erected on its banks, among them two cotton mills, two woollen mills, two grist mills, one saw-

PAPER No. 19

laning mills, and one sash and door factory. The town contains Episcopal, holic, Presbyterian and Methodist churches, an agency of the Bank of d of the Ontario Bank, two telegraph offices, two printing offices from which rs are issued, eight hotels, and about one hundred stores.

r to accommodate the growing traffic by water, an old wharf, called the harf,' situated on the Crown land opposite the canal bridge at the foot of reet, on the River St. Lawrence, which was extremely dilapidated, was 1 foot below the extreme low water level and rebuilt on a height of 5 feet of 152 feet and 10 feet wide; at the down-stream end an extension 75 feet wide and 13 feet high was built and sunk in 8 feet at low water; a return t long, 10 feet wide, was built to the shore; the whole well ballasted with

arf is parallel with the shore, and has a total length of 227 feet, by a height and stands in 9 feet at low water, with an ice-breaker at its up-stream ater face is built with close-faced timber, 12 by 12 inches, laid to a batter The corners are protected with steel boiler plates ⅜ inch thick.

is planked over for a width of 12 feet from the outer face of the wharf e between that floor and the shore has been filled in on the whole length to he wharf with dredged materials, on which has been put a layer of gravel. house 12 by 18 feet has been erected on the wharf, and the road from the canal has been improved and put in good condition.

g has been performed in front of the wharf on a length of 300 feet by a feet on a depth of 4 feet.

rk, carried out by day labour, was commenced in May and completed in

t of construction	$3,841 92
" dredging	960 00
Total cost	$4,801 92

DEPOT HARBOUR.

the session of Parliament of 1902 a sum of $65,000 was revoted to be ards the construction of an additional length to the elevator wharf. The tension to be 1,250 feet long, 60 feet wide, built outwards from the end of elevator wharf towards Supply island. The above work is comprised in a ed May 14, 1902, for a total sum of $195,000.

the fiscal year changes were made at the request of the Canada Atlantic npany in the location and the general lines of the works, consisting in the the elevator wharf for a length of 525 feet, 80 feet in width, and the con- a landing pier 400 feet in length, 150 feet in width, in the innermost por- arbour.

hanges were accepted by the contractors under their former contract, and nnected therewith may be summarized as follows:—

ension.—To consist of cribwork walls forming the sides and outer end of h filling between them; in substructure, the work to be built in six cribs; and 2, 200 feet long by 30 feet wide; cribs Nos. 3 and 4, 150 feet long by ; cribs Nos. 5 and 6, 175 feet long by 40 feet wide; built up to the level of ve extreme low water level; the whole work to rest on an artificial stone

superstructure the work to be built of continuous cribwork walls 12 fee d up from the top of separate cribs to a height of 7 feet above extreme low

nding Pier.—To consist of cribwork walls, forming the sides and outer end with filling between them, and a stone embankment to connect with the shore.

The substructure to be built in five cribs; cribs Nos. 1, 2, 3 and 4, 200 feet long by 30 feet wide; crib No. 5, 90 feet long, 30 feet wide, built up to a level of 1 foot above extreme low water; the whole work to rest on an artificial stone foundation.

Superstructure to be built of continuous cribwork walls, carried up from the top of cribs to a height of 7 feet above extreme low water.

Some dredging required in the construction of the landing pier is to be performed by the department dredges, and is not included in the contract.

During the last fiscal year a large portion of the artificial foundation of stone of the extension was built, and cribs Nos. 1 and 3 of the extension were built, sunk in place and fully filled with stone ballast. A large quantity of materials of construction were also delivered on the works.

The expenditure for the fiscal year 1902-3 was $30,919.89.

GODERICH.

Goderich, in the county of Huron, is situated on the east shore of Lake Huron, at the mouth of the river Maitland about 68 miles from Sarnia, and 60 miles from London.

It is the terminus of the Buffalo branch of the Grand Trunk Railway, and a place of considerable importance.

The reconstruction of the superstructure of, or repairs to the commercial dock, which is 675 feet long, was undertaken towards the end of May, 1902, and completed in the early part of September, although the whole work done under the appropriation 'Repairs to Piers and Docks,' was not completed until October 9, the work necessarily being slow, it not being advisable to dismantle too much of the dock at once, so as not to interfere with the traffic, and also on account of frequent interruptions caused by trains and vessels.

These renewals and repairs cost $5,979.80, including the removal of some logs and stumps that had found their way into the deepened basin of the inner harbour.

HAILEYBURY.

Haileybury, a post village in Nipissing county, is situated on the west shore of Lake Temiscamingue, near the entrance into Wabi bay.

In the fiscal year 1900-1 the construction of a wharf was commenced to accommodate the local trade. When completed this wharf will have a close-pile head, 50 feet square, filled with stone, built in 8 feet of water, and connected with the shore by an approach built of stone and earth, 560 feet long, 15 feet wide on top of roadway.

No work was done on this structure during the fiscal year 1901-02.

During the fiscal year 1902-03 work on this wharf was resumed and some progress made with the construction of the approach, which is, however, not yet completed.

Expenditure during the past fiscal year, $3,753.98.

Total expenditure to June 30, 1903, is $5,754.20.

HARWOOD.

Harwood is situated on Rice lake, county of Northumberland, 30 miles to the north of Peterborough.

At the last session of parliament the sum of $1,000 was appropriated for completing the construction of a wharf at this place, and on June 19 authority was given to expend the amount. The work was ordered to be done by days' labour on May 26, 1903, and was completed in June; it consisted in building a wharf of pile bents, with stringers and flooring a length of 120 feet, with a stone and gravel approach at the shore end 60 feet long.

In doing the above work some 1,570 feet B.M. oak; 6,500 feet B.M. pine; 5,431 feet B.M. cedar; 41 oak and tamarack piles; 236 lbs. iron and 130 cubic yards stone were used.

Expenditure for fiscal year 1902-03, $999.40.

IAL PAPER No. 19

HILTON.

on, a small village in the county of Algoma, is situated on the north shore of h's Island, in the north passage of Lake Huron, 5 miles from Stobie, on the Pacific Railway. It contains three churches, two stores, one hotel and two he sum of $1,500 was appropriated for repairs to the wharf at this place. Work nenced on August 26, 1902, and completed on June 30, 1903, and consists in the old portions of the pier 100 feet by 100 feet from low water up; repairing g in with gravel the approach, and also a row of face timbers on the outer

oing the above work some 2,700 feet B.M. pine; 30,800 feet B.M. hemlock; t B.M. tamarack; 4,956 feet B.M. cedar; 21 loads of gravel and 3,277 lbs. of e used.

nditure for fiscal year 1902-03:—

Labour and superintendence	$ 555
Materials, lumber, iron, &c	945
	$1,500

HUNTSVILLE.

tsville is situated on the Muskoka river, 34 miles north from Gravenhurst, in ict of Muskoka. The chief trade is lumber. Population, 1,000.

he last session of Parliament the sum of $5,500 was appropriated for the pur- uilding a wharf at this place, and on August 22, 1902, a contract was let to Mr. Hutcheson to construct the wharf, composed of pile trestlework, 200 feet in nd 24 feet wide, for the sum of $2,770. Work was commenced in April, 1903, wharf was completed in June the same year. In order to give a better approach harf, the shore was extended, costing $320.

enditure for fiscal year 1902-3, $3,396.03.

KINCARDINE.

cardine, in the County of Huron, is situated at the mouth of the Penetangore ich empties into Lake Huron, 31 miles south of Southampton. It is the termi he Wellington, Grey and Bruce Division of the Grand Trunk Railway. Exten- deposits are found here.

he last session of Parliament the sum of $4,000 was appropriated for repairs ers and dredging at Kincardine, and authority was given on June 19, 1902, to he sum of $2,500 upon the repairs by day labour. A further sum of $1,500 was ed on September 10 for the repairs. Work was commenced on July 1, 1902, and d to June 30, 1903. The work consists in renewing 450 feet of the eastern end rth pier from low water up.

erforming the above repairs some 38,778 feet B.M. fir; 1,020 feet B.M. oak et B.M. cedar; 22,252 feet B.M. hemlock, and 6,000 lbs. iron bolts and spikes d.

enditure for fiscal year 1902-3, $4,036.71.

KINGSVILLE.

sville, County of Essex South, on the north shore of Lake Erie, about 25 t of the mouth of the Detroit River, Essex and Lake Erie Railway. Popula- 7.

he last session of Parliament an appropriation was voted for repairs to the r, also to build an extension to the same, and to repair the pier at Kingsville 19, 1902, authority was given to expend $5,000, and on December 12 a further

sum of $4,000, in all $9,000, to do the work by day labour. Operations were commenced on July 1, 1902, and completed in June, 1903. The work consisted in the completion of an extension of the breakwater over the bar, 400 feet in length, and completing the reconstruction of the shore end of the breakwater. A large quantity of the timber and stone for the work was obtained last year, so that since July 1 only the following has been purchased, viz.: 2,239 lbs. of iron, 7,14 cords of stone, and 25,000 feet B.M. of oak

The expenditure for the fiscal year 1902-3, $8,983.23.

MEAFORD.

Meaford is an incorporated town in the County of Grey, on the west side of Georgian bay, 18 miles west of Collingwood, and 20 miles to the eastward of Owen Sound It is the terminus of the Northern Division of the Grand Trunk Railway. Population 2,500.

During the session of Parliament of 1902 the sum of $30,000 was appropriated for dredging and other improvements to this harbour. On June 15, 1900, a contract was let to Mr. M. A. Piggott, of Hamilton, to construct 930 feet of close piling on the south-east side of the harbour, extending from the east abutment of the road bridge, in a north-easterly direction, to the east pier; the extension of the east breakwater 300 fee in length, and dredging to 20 feet at low water an area in the harbour to accommodate large-sized vessels, and the removal of 100 feet from the outer end of the western pier. The amount of Mr. Piggott's tender was $62,570.

On July 19, 1901, authority was given to substitute iron piles and wooden breast work in lieu of the close-pile protection work called for in the contract, and an extra allowance for the same, amounting to $4,914, was granted to the contractor.

Owing to inadequate plant and want of material to carry on the work, the contract was not completed until July, 1903.

On July 4, 1902, authority was given to dredge on the west side of the harbour, to enable large vessels to turn in the basin, and Messrs. Rodgers & O'Brine's plant was engaged to do the work, and operated from August 4 to 20 of the same year, removing 10,500 cubic yards of material.

Instructions having been given on August 13, 1902, to remove only 29 feet of the outer end of the western pier, instead of 100 feet as called for in the contract; but the contractor having removed his plant and men from the place, asked to be relieved from performing the work, and it was done by day labour, at a cost of $992.11.

On December 19, 1902, authority was given to expend $7,000 to repair the west pier, and active operations were commenced at once; the whole of the superstructure of the shore end, a length of 388 feet, has been renewed, and the approach, 200 feet in length, graded. In doing the above work 139,582 feet B.M. of cedar, 9,369 feet B.M. rock elm, 300 cubic yards of stone, and 5,300 lbs. iron were used.

A portion of the breakwater superstructure was also repaired, in which some 42,696 feet B.M. were used.

The expenditure for the fiscal year 1902-3 was $25,157.12.

MIDLAND.

Midland, Simcoe county, is at the terminus of the Midland division of the Grand Trunk Railway, on Georgian bay. Population, 3,500.

Large quantities of lumber are shipped to and from this harbour, and the railway company has two large grain elevators at this place. During the past two years the Canadian Iron and Furnace Company has erected large smelting works.

At the last session of parliament the sum of $8,000 was appropriated for dredging at Midland, and on June 23, 1902, authority was given to continue the dredging in the harbour by the Owen Sound Dredge and Construction Company's plant, which was commenced by them last year. Work was resumed on June 30. By September the whole

iation had been expended, and authority was given on the 13th of that nue the work, which was accordingly done, and the plant has worked up 70 hours at $10 per hour, dredging and removing 111,478 cubic yards of

re for fiscal year 1902-03, $23,759.44.

NEWCASTLE.

is situated in the county of Durham, on the north side of Lake Ontario, rom Toronto. Population about 1,000. It contains large woollen mills, implement factory.

t session of parliament the sum of $5,000 was appropriated for repairs this place, and on June 19, 1902, authority was given to expend the riated and to do the work by days' labour. Operations were commenced 02, and were continued until the end of November, when they ceased months, and were resumed in May, 1903. The work consisted in rebuild- ructure of the east, or landing pier, and repairing the substructure where

he above work some 155,075 feet B.M. of pine timber; 5,373 lbs. of iron s,and 217 cubic yards of stone were used.

re for the fiscal year 1902-03:—

r and superintendence	$1,506 44
ials, lumber, iron, stone, &c	3,493 56
	$5,000 00

OAKVILLE.

s situated on the north shore of Lake Ontario, in the county of Halton, of Toronto Population about 1,700. It contains several mills and fac- pyard. The trade of this place is local. It is a station of the Hamilton Grand Trunk Railway.

session of parliament the sum of $4,000 was appropriated for repairs to at this place, and on June 19, 1902, authority was given to expend the do the work by days' labour. Operations were not commenced until ing to the difficulty in obtaining labour and lumber. Work practi- October 22 for the winter months, as there was not sufficient lumber p the men employed. It was resumed in April, 1903, and completed by fiscal year. The work consists in rebuilding 190 feet of the north end er, 4 feet above low water and filling same with stone, also replanking 9 feet on the same pier. Constructing a crib for the outer end of the et long, 24 feet wide and 16 feet high.

he above work some 80,230 feet B.M. of hemlock timber; 42,718 feet 54½ toise of stone, and 4,407 lbs. of iron bolts and spikes have been used.

re for the fiscal year 1902-03, $4,013.65.

ORILLIA.

the county of Simcoe, is situated on Lake Couchiching, 89 miles north- erborough, and 23 miles north-east from Barrie. Population, 3,000.

session of parliament an appropriation was voted for the construction his place, and on January 12, 1903, a contract was let to Messrs. Alex. J. McKinnon, to build a structure 200 feet in length, with a width of 20 of cribwork substructure and concrete superstructure, for the sum of operations were commenced in April last. The work was not completed he fiscal year.

re for fiscal year 1902-03, $3,076.33.

OSHAWA.

Oshawa is situated on the north shore of Lake Ontario, in the County of Ontario, 34 miles east of Toronto. Its manufactories include engines, boilers, printing and mill machinery, agricultural implements, furniture, leather and bolts and screws. Population, about 4,500.

At the last session of Parliament the sum of $1,250 was appropriated for improvements at Oshawa harbour, and on June 19, 1902, authority was given to expend the amount by day labour. Work was at once commenced and completed in September the same year. It consisted in completing repairs to the west side of the landing pier; rebuilding coal tramway trestle; renewing sills and flooring to the grain warehouse, and placing a hoisting plant in coal elevator.

In doing the above work some 7,551 feet B.M. of pine timber, 1,863 feet B.M. hemlock; 1,192 lbs. of iron bolts and spikes, and 150 lineal feet of oak were used. The old timber, which could not be used in the repairs, was sold by public auction for $10, and the cheque duly deposited in the Bank of Montreal to the credit of the Receiver General.

Expenditure for fiscal year 1902-3, $1,268.20.

OWEN SOUND.

Owen Sound, in the County of Grey, is situated at the mouth of the Sydenham river, which flows into the head of Owen Sound, an arm of Georgian bay. The town is the centre of an extensive agricultural district, and is the terminus of the Grand Trunk Railway branch of the Georgian Bay and Lake Erie Division, also of the Canadian Pacific Railway—Toronto, Grey and Bruce Division. There are several lines of steamers running to and from Owen Sound. Population, 9,500.

During the session of Parliament of 1902 the sum of $24,000 was appropriated for dredging and pile protection work at this place.

In 1902 a contract was let to Mr. A. F. Bowman, of Southampton, to deepen and dredge on the west side of the harbour at the entrance, in order to give a larger area of harbour room, the contract being a bulk sum of $24,210. Operations were commenced on June 30, 1902 the same being suspended on December 6, and renewed in April, 1903, up to which time the plant removed 104,001 cubic yards *in situ*.

In September, repairs were made to the sheet piling on the west side of the harbour, replacing caps, iron rods, &c.

In October the contractor deepened the Canadian Pacific Railway Company's slip, removing 4,050 cubic yards of material.

The expenditure for fiscal year 1902-3 was $8,928.27.

PELEE ISLAND.

Pelee island is situated on the western end of Lake Erie, in Lat. 41° 46′ N., Long. 28° 45′ W., about 35 miles south-east from the mouth of the Detroit river, and 16 miles south of the town of Kingsville, Essex county. Population of the island about 600. The products of the island are grapes, wine, fruit and farm produce.

At the last session of Parliament the sum of $5,000 was appropprited for the extension of the pier at this place, and on December 15, 1902, a contract was let to A. M. McCormack & Son, to build an extension 50 feet long by 40 feet wide for the sum of $3,500. On May 8 the contractor agreed to raise the height of the pier 1 foot for an additional sum of $800. Work was commenced early in the spring of 1903, but was not completed at the end of the fiscal year.

Provision has been made to build a warehouse on the outer end of the pier when the extension is completed.

Expenditure for fiscal year 1902-3, $3,600.54.

PAPER No. 19

PENETANGUISHENE.

guishene, in the County of Simcoe, is situated on the north-eastern penin-
gian bay, formed between Nottawasaga bay and the water of the Severn
s north-west of the town of Barrie. It is the terminus of the branches of
unk Railway, and a large quantity of lumber is shipped thence from the
t shores of the Georgian bay.

ast session of Parliament the sum of $10,000 was appropriated for dredg-
rbour, and on June 23, 1902, authority was given to continue the dredging
owman & Porter's plant, which was commenced by them last year. Work
on June 30, 1902, and up to June 30, 1903, the plant had worked 1,278
moved 67,686 cubic yards of material.

ure for the fiscal year 1902-3, $10,076.65.

PICKERING.

g Harbour, formerly known as Frenchman's bay, is situated on Lake
iles east of Toronto.

st session of parliament the sum of $3,200 was appropriated for repairs to
dging at Pickering, and on June 19, 1902, authority was given to expend
abour in repairs. Work was only commenced in September, owing to the
obtaining labour and materials. The work consisted in completing the
east pier. The work was completed in May, 1903.

the above work there was used some 11,256 feet B.M. of pine timber;
M. of cedar, and 505 lbs. of iron.

ture for fiscal year 1902-03:—

our and superintendence	$258 07
erials, lumber, iron, &c	341 93
	$600 00

POINT EDWARD.

dward, Sarnia, is situated in the county of Lambton, near the head of the
ver, 61 miles west of London.

st session of parliament the sum of $10,000 was appropriated for dredging
n the St. Claire river (Point Edward), and on June 20, 1902, authority was
loy the plant of Messrs. Muir Brothers and O'Sullivan to do the work
perations were commenced in April, 1903, and up to the end of the fiscal
t worked 448 hours and removed 35,700 cubic yards of material.

ture for fiscal year 1902-03 is $6,966.34.

PORT COLBORNE.

tract for the construction of the Port Colborne breakwater was awarded
ogan and Macdonnell on March 14, 1901, for the sum of $395,000.

ortance of this breakwater as a protection to the commercial docks under
nstruction by the Department of Railways and Canals is unquestionable.
hese docks could not be utilized during westerly gales, which are of frequent
t the eastern end of Lake Erie, and the realization of the project of making
e a transfer point for grain and merchandise for conveyance to the ports
Quebec and all other points on the river St. Lawrence would have been

ucture as originally designed was to be 5,700 feet in length, extending from
and known as Sugar Loaf Point, in an easterly direction, to the 21 foot
nd was to consist of:—

1. A head block, all cribwork, 100 feet in length, 60 feet in width, built up to a height of 13 feet above ordinary low water level of Lake Erie (13·87 feet above the mitre sill of the new lock at Port Colborne).

2. Of 4,800 feet of cribwork, 25 feet in width, built up to an elevation of 7 feet above low water, with a break along the southern face 4 feet higher stepping down to the 7 feet level, the width of the break being 12 feet.

3. Of a stone embankment at the shore end, 800 feet in length, 25 feet in width on top, with slopes of 1 to 1½.

The construction of the cribs was commenced during the winter of 1901, but the first crib was only placed in position on August 19 of that year. Since then, however, substantial progress was made in the construction of the work, and at the end of the fiscal year 1901-02, the outer 900 feet of the structure, including the head block, were entirely completed; the adjoining 1,900 feet were built up to a height of 6 feet above ordinary low water, and 400 feet of cribwork had been sunk in position and fully ballasted, the value of the work performed during that year being $206,300.

During the fiscal year 1902-03 the work of completing the 2,300 feet of superstructure left unfinished on June 30, 1902, was proceeded with and satisfactorily completed, and a further length of 1,200 feet of cribwork was placed in position, fully ballasted, and the superstructure built up to within two feet of the top of the work.

During construction, principally early in the spring and late in the autumn, the breakwater was severely tested by frequent and strong south-westerly gales, that it was deemed advisable to strengthen the outer end of the breakwater, and on June 23, 1902, a contract was entered into with Messrs. Hogan and Macdonnell for doubling the width of the outer 2,400 feet of the structure, the cash consideration to the contractors being $100,000.

This work was proceeded with during the fiscal year 1902-03, and completed before the end of the year.

Subsequently, it was also deemed advisable to abandon the construction of the inner 1,300 feet of the breakwater, as it had been ascertained that the harbour would be thoroughly protected without constructing this portion of the work, and in lieu of this construction, it was decided to place a covering of concrete of an average thickness of 1¼ feet on the outer 2,400 feet of the breakwater inside the break, and thereby prevent damage to the superstructure of the breakwater.

This concrete covering was satisfactorily completed before the end of the fiscal year, and has certainly proven a great success.

The total expenditure on the breakwater to the end of the fiscal year has been $473,665, as follows:—

During the fiscal year 1901-1902	$206,300 00
" " " 1902-1903	262,666 46
	$468,966 46

This amount includes an expenditure of $8,475 incurred in placing large stones and concrete blocks along the southern face of the breakwater, on the top of the specified slope of stone, and thereby save the southern face of the breakwater from damage by storms.

The work was completed in November, 1903.

The breakwater as constructed is 4,400 feet in length, and consists of:—

1st. The head block already described.

2nd. 2,400 feet of cribwork, 50 feet in width, partly covered by concrete.

3rd. 1,900 feet of cribwork, 25 feet in width.

This breakwater affords splendid protection to the entrance of the Welland Canal and to the commercial docks under course of construction, from south-westerly gales, but in order to make the harbour of Port Colborne an absolutely safe and useful harbour, it will be necessary to build a second breakwater 2,000 feet in length on the east side of the entrance to the canal.

APER No. 19

PORT ELGIN.

in is in the electoral division of the southern portion of the county of eastern shore of Lake Huron, about 24 miles north of Kincardine, and 4 of Southampton. It is a station of the Wellington, Grey and Bruce he Grand Trunk Railway. There is no track from the railway to the pulation, 2,000.

st session of parliament the sum of $5,000 was appropriated for an exten- eakwater, repairs to the landing pier, and dredging at Port Elgin, and on , authority was given to expend the amount appropriated, but as there was g account of $1,500 to be paid for dredging done last year, authority to ditional sum equal to that amount was given on November 25, in order to breakwater extension of the breakwater.

s commenced in July, 1902, and continued until June 30, 1903, and con- nding the southern end of the breakwater a distance of 210 feet, viz.: 60 feet, 1 crib 20 by 60 feet, and 1 crib 30 by 30 feet, also repairing the rom low water up, a length of 300 feet.

the above work some 333 cords of stone; 12,053 lbs. iron bolts and spikes; M. cedar; 4,601 feet B.M. beech; 115,373 feet B.M. hemlock, and 148 lbs.

ure for fiscal year 1902-03, was $6,456.46.

PORT HOPE.

e is situated in the county of Durham, on the north shore of Lake Ontario, of Toronto, on the Grand Trunk Railway, and has a population of 4,188. in lumber and grain.

st session of parliament the sum of $5,000 was appropriated for repairs to ort Hope, and on June 19, 1902, authority was given to expend the amount and to do the work by days' labour. Operations were commenced on July ed until November, when the work was suspended for the winter months, in May, 1903. The work consists in renewing the superstructure of the he east pier a length of 180 feet, and shore end of the same 240 feet in

the above work the following materials have been used, viz.: 124,300 feet timber and 997 lbs. of iron bolts and spikes.

ure for the fiscal year 1902-03, $5,017.45.

PORT ROWAN.

an, Norfolk county, is on the north shore of Lake Erie, in the inner bay t, and is 21 miles from the town of Simcoe.

ary 5, 1903, authority was given to expend the sum of $275, which was pplemented with $100 more, to make the necesssary repairs to the landing pproach, at this place. Work was commenced in May and completed in It consists in rebuilding 440 feet in length of the riprap stone wall of the he east side, and repairing the west side where required; replanking and ew stringers at the outer end of the pier.

the above work, some 150 cubic yards of stone were replaced; 3,028 feet imber; 852 feet B.M. of oak; 7 loads of pine brush and 4 loads of gravel

ure for fiscal year 1902-3:—

rials, lumber, gravel, stone, &c.	$142 24
ur and superintendence.	121 95
	$264 19

PORTSMOUTH.

Portsmouth, is situated on the north shore of Lake Ontario, County of Frontenac, on Portsmouth bay, 2 miles from Kingston. Population 1,700.

At the last session of Parliament, the sum of $500 was appropriated to complete the repairs to the pier at this place, and on June 19, 1902, authority was given to do same by days' labour. Work was commenced on July 25, and completed on August 31. The work consisted in levelling up the outer end of the pier, which had subsided, and in repairing the approach.

In doing the above work, some 9,600 feet B.M. of timber and plank, and 1,948 lbs. of iron were used.

Expenditure for the fiscal year 1902-3, $516.50.

PORT STANLEY.

Port Stanley is on the north shore of Lake Erie, at the mouth of Kettle creek, in the County of Elgin, about 85 miles west from the entrance of the Welland Canal, and 8 miles south from the city of St. Thomas, and is the terminus of the Lake Erie and Detroit River Railway. Population about 1,000.

At the last session of Parliament the sum of $14,000 was appropriated to complete repairs to the piers and for dredging at this place. On June 19, 1902, authority was given to expend $5,000 to carry on the repairs by day labour, and on December 12 an additional amount of $5,200 to complete same. Operations were at once commenced, and in June, 1903, the appropriation had been expended. The work consists in thoroughly protecting the outer end of the west pier and the reconstruction of the superstructure of the shore end of the east pier, a length of 450 feet from low water up.

In doing the above work some 104,750 feet B.M. of pine timber, 33,370 feet B.M. of cedar, 8,527 feet B.M. of oak, 4½ cords of stone, 200 feet of ¾-inch wire rope, 31,651 lbs. of iron bolts and spikes, 55 oak piles 36 to 40 feet long, and 23,000 feet B.M. of hemlock have been used.

Expenditure for the fiscal year 1902-3, $10,267.79.

RICHARD'S LANDING.

Richard's Landing is situated at the north-eastern end of St. Joseph's island, in the District of Algoma.

The sum of $1,500 was authorized to be expended for repairs to the wharf at Richard's Landing. Work was commenced on July 18, 1902, and completed on November 10 the same year, and consisted of general repairs to the wharf, renewing the greater part of the structure from low water up, replanking same, building an entirely new approach of trestlework and a warehouse.

In doing the above work some 20,500 feet B.M. hemlock plank, 10,725 lineal feet hemlock, 380 feet B.M. cedar, 100 feet B.M. birch, 10 M. shingles, 2,300 feet B.M. pine, 1,297½ lbs. iron were used.

Expenditure for the fiscal year 1902-3, $1,498.46.

RONDEAU.

Rondeau is situated in the County of Kent, at Pointe aux Pins, on the north shore of Lake Erie, about 140 miles west of Port Colborne, the Lake Erie entrance to the Welland Canal. It is a harbour of refuge, and a very important one on this side of the lake. Of late years the beach at Rondeau has become a much frequented summer resort, and many cottages have been erected. The Erie and Huron Railway have constructed their line this far, and have established a dock for lake ferry to deliver coal in cars from the other side.

At the last session of Parliament an appropriation was voted for repairs to the piers and dredging at this place, and on June 19, 1902, authority was given to expend

y on the repairs by day's labour. Operations had been commenced in
nd were completed in June, 1903. The work consisted in completing the
of the superstructure of the eastern pier, at the northern end, a length
so rebuilding the superstructure of the breakwater on the east side of the
gth of 338 feet.
the above work some 95,071 feet B.M. pine, 14,400 feet B.M. fir, 8,670
; 26,800 lbs. iron were used.
ure for the fiscal year 1902-3, $10,004.75.

SAULT STE. MARIE.

. Marie is situated at the head of St. Mary's river, which connects Lake
Lake Huron. On November 11, 1902, authority was given to dredge in
ngside the McKay wharf at this place, to give sufficient depth for vessels
this wharf. Work was commenced on November 10, and up to June 30,
t of Messrs. Hickler Brothers worked 859½ hours dredging, and 19½ days
lasting, at a cost of $11,295.75. The inspector's wages amounting to $347.
3, 1903, authority was given to expend the sum of $3,200 in repairing the
proach to the same. The work performed was the entire rebuilding of the
low water up, a distance of 230 feet; rebuilding 11 new cribs in the old
e structure and replanking the deck of the entire wharf, renewing the
re required, also placing a protected sidewalk on the approach.
the above work some 95,071 feet B.M. pine, 14,400 feet B.M. fir, 8,670
nk and timber, and 1,050 lbs. iron were used, placing the wharf in thor-

ure for fiscal year 1902-03, $15,407.98.

SHEGUINDAH.

ah, Algoma district, is situated on the east end of Manitoulin Island, at
to Haywood Sound, and at the western end of Sheguindah bay. The
iles south of Little Current, and 16 miles north of the village of Mani-

9, 1902, authority was given to expend the sum of $200 in building a ware-
0 feet on the wharf at this place. Work was commenced at once, and the
leted by August 15 of the same year.
ure during the fiscal year 1902-03, $181.35.

SOUTH NATION RIVER.

ation river takes its rise in the township of Matilda, in the county of
after a very irregular course of 100 miles, enters the Ottawa river 5 miles
genet, county of Prescott. There are several large tributaries which
ost insufficient, especially during freshets, on account of its small flowing
carry all these waters without overflowing the banks and flooding large
Apart from this, obstructions exist in the bed of the river, which impede
e stream, and their removal would give a freer course to the discharge, and
f the lands would be averted to a certain extent.
serious of these obstructions is called the 'Pitch-Off,' situated about 1½
Plantagenet, and 6½ miles above the outlet of the river. It consists of a
l rock which crosses the river, almost from bank to bank, with an average
feet, and an elevation of about 4 feet above low water level. The bed
t this point is 400 feet wide.
rs ago on the east side of the river, a cut 100 feet wide and 1 foot deep
was made through this obstruction by the local government to drain the

river above and to check the summer floods which caused considerable damage to crops over an area of about 10,000 acres.

During the fiscal year 1900-01 this cut was widened to 225 feet, and excavated to a depth of 1½ feet below low water, by removing 6,500 cubic yards of rock at a cost of $5,017.16.

During the fiscal year 1901-02 the existing cuts were cleaned down to grade, widened to 325 feet, and excavated to grade, by removing a total of 5,200 cubic yards of rock at a cost of $4,438.09.

During the fiscal year 1902-03 the cut was widened to 360 feet, and the whole channel was deepened to 2 feet below extreme low water, by removing a total of 1,250 cubic yards of rock.

Expenditure for the last fiscal year, $1,002.80.

Total expenditure to June 30, 1903, $10,458.05.

ST. JOSEPH.

St. Joseph is situated on the east side of Lake Huron, in the county of Huron,, about 14 miles south of Goderich. Population, 500.

During the session of parliament of 1902 the sum of $5,000 was appropriated towards building a wharf at St. Joseph, Huron county, a large amount of materials for the work had been purchased during the latter end of the fiscal year 1901-02. Operations were at once commenced and carried on until the early part of December, 1902, when the appropriation having been expended, the work was stopped. The structure under construction is a stone embankment approach 290 feet long, and cribwork with continuous superstructure 408 feet in length, 20 feet wide. The approach is completed up to water level; 2 cribs 20 by 20 feet are in place at the end of the approach, and 8 cribs are framed ready for sinking; 234 cords of stone and 1,000 bolts 27 inches, and 785, 24 inches long, are delivered and paid for.

During the past season were purchased some 2,150 lbs. iron; 550 cords stone; 88,200, feet B.M., hemlock; 4,222 feet, B.M., pine; 2,600 feet, B.M., elm.

Expenditure for fiscal year 1902-03, $5,042.39.

STURGEON FALLS.

Sturgeon Falls, a post village in the District of Nipissing, Ontario, is situated on the Sturgeon river and on the Canadian Pacific Railway, 23 miles west of North Bay.

The Sturgeon river is available for boats plying on Lake Nipissing.

At the last session of Parliament the sum of $500 was granted to be applied towards the construction of a wharf and approaches.

On January 23, 1903, a contract was let for the construction of the wharf at the foot of Wharf lane, for the sum of $2,810, comprising the following works:—

The wharf to be formed of four cribs sunk 20 feet apart and unitel together with platforms. The cribs to measure 30 by 20 feet (except the first crib, forming the approach, which is 20 feet square), to be sunk in 10 feet of water, in line, in a northwesterly direction, at an angle of 80° 17′ with wharf line. The body of the work to form an L and built up to an elevation of 6 feet above extreme low water level. The cribwork to be built with round timber throughout, with landing faces sheathed.

The work was progressing in a satisfactory manner at the end of the fiscal year.

Expenditure for fiscal year 1902-3, $506.54.

SYDENHAM RIVER.

Sydenham river has its outlet in Chenal Ecarte, the passsage between St. Anne island and the mainland. From its mouth to Wallaceburg it is a large navigable stream,

APER No. 19

nt it divides into two branches—north to Wilkesport 14 miles, and east 5 miles, and on these two branches small steam crafts with scows are run, timber are rafted.

st 21, 1902, authority was given to expend the sum of $100 in the removal ther obstructions from the Sydenham river between Wilkesport and Wal- h had been carried into the stream by the floods in July. Work was com- otember 12, and completed by October 12.

ure for the fiscal year 1902-3: Labour and superintendence, $96.

THAMES RIVER.

iver empties into Lake St. Clair, and is navigable as far as the town of

e session of Parliament of 1902 the sum of $8,200 was appropriated for channel of this river from Chatham to Lake St. Clair; and on April 22, y was given to arrange with the Chatham Dredge Company to continue nenced last year, in order to give an entrance channel 100 feet wide and Operations were commenced on Jun 4, 1902, and the work was completed 8, the same year, during which time the plant dredged and removed ards of material at 13½ cents per cubic yard=$4,767.60, and worked 2¾ g logs at $8 per hour=$22.

ure for fiscal year 1902-3, $8,449.77.

THESSALON.

is situated on the north side of the north channel of Lake Huron, in f Algoma, 50 miles east of Sault Ste. Marie. Considerable lumber is this place.

st 22, 1902, authority was given to expend the sum of $400 in building a d in making necessary repairs to the flooring of the wharf at Thessalon. of $100 was allowed on September 26 for repairs. The warehouse is 72 , built on cribs. All the work was completed in October of the same year.

ure for fiscal year 1902-3:—

ur and superintendence	$276 30
rials, lumber, iron, paint, &c.	383 50
	$659 80

THORNBURY.

y, an incorporated village in Grey county, is situated at the mouth of which empties into Georgian bay; on the Meaford branch of the Grand y, 8 miles from Meaford, and 19 miles from Collingwood. It contains twenty stores, two hotels, two grist, one saw, one woollen and one plan- printing offices issuing weekly newspapers, and telegraph and express ation, 900.

e session of Parliament of 1902 the sum of $4,000 was appropriated for at this place. The work consisted chiefly in dredging, and was performed dgers & O'Brine's plant, operating from August 25 until December 10, 528½ hours and removing 34,771½ cubic yards of material. Some neces- ere made to the landing pier in May, 1903, costing $507.93.

nditure for fiscal year 1902-3 was $6,637.93.

TORONTO.

arbour is situated on the north shore of Lake Ontario, and is formed by 1½ miles in diameter, separated from the lake by a low island (formerly

a peninsula) about 6 miles long, making a safe and well-sheltered harbour for containing a large number of vessels.

At the last session of Parliament an appropriation was voted for works at the eastern entrance, and authority was given on July 15, 1902, to apply the amount appropriated in constructing three mattress groynes to prevent erosion of the south-west end of Toronto island, extending the existing groynes, and in making general repairs to the entrance piers, &c.

On July 21, 1902, Messrs. Magann & Phinn completed their contract, for the sum of $61,171, let to them on February 10, 1900, to extend the west pier at the Eastern Gap out into the lake a distance of 800 feet.

The groynes at the south-west end of the island were constructed, and repairs made to the west pier of the eastern channel and breakwater, from Fisherman's island to the east pier; also repairs and renewals of the deck of the breakwater from the eastern channel westward. Some 20,000 feet B.M. of plank was used for this purpose, the City Council of Toronto contributing 3,000 feet.

In constructing the groynes and making the repairs, &c., 12,996 feet B.M. of fir timber; 4,150 feet B.M. of cedar; 33,229 feet B.M. pine; 180 feet B.M. of oak; 26,329 feet B.M. of hemlock; 842 lineal feet brush mattress; 200 cubic yards of stone ballast; hardware, paint, oils, &c.—cost, $185.65, were used.

The expenditure for the fiscal year 1902-3, $9,139.08.

VICTORIA HARBOUR.

Victoria Harbour is situated in the County of Simcoe, on Matchedash bay, 10 miles west of Midland.

On October 21, 1902, authority was given to do 10 days' dredging at this place, and a further time of 10 days was ordered on December 9. An agreement was made with Messrs. Bowman & Porter to do the work required at $80 per day of 10 hours, removing 600 cubic yards daily. The work was completed on November 26, the plant having worked 20 days, and removed 11,506 cubic yards of material. The contractors were allowed 5 hours for towing plant to and from Victoria Harbour.

Expenditure for fiscal year 1902-3: Paid Bowman & Porter, 20 days 5 hours, at $80 per day, $1,761.10.

WENDOVER.

Wendover, in the County of Prescott, is situated on the south shore of the River Ottawa, opposite North Nation Mills, a station of the Canadian Pacific Railway. The nearest railway station on the south shore is Plantaganet, distant about 3 miles.

The construction of a wharf was commenced in September, 1901. It consists of the following, viz.:—

(*a*) A stone embankment of a length of 160 feet from the shore by a width of 13 feet at the top, with slopes 1 in 1, and a height of 12 feet at the north end.

(*b*) A trestle or pile approach of a length of 342 feet from the stone embankment to the head block, by a width of 18 feet for 294 feet and a width of 60 feet for the remaining 48 feet adjacent to the head block.

(*c*) A head block of pilework laid at an angle of 82° 30′ with the approach, of a length of 71 feet by a width of 32 feet, with a close-faced cribwork ice-breaker 37 feet by 24 feet at its up-stream end.

The wharf at its outer face has a height of 30 feet, stands in 10 feet at low stage of the water, and is 3 feet above the high-water level.

There is a floor of 34 feet in length, by a width of the wharf adjacent to the ice breaker, and 8 feet above the low-water level, with a slip 38 feet long by 11 feet wide sloping upwards 1 in 5 to the approach.

PAPER No. 19

use and waiting-room, 20 by 36 feet, is erected on the approach, adjacent ace of the wharf, along the eastern side of the slip, and a pile ice-breaker. ters of 30 piles each, well bolted together, are placed at equal distances harf and the shore, to protect the pile approach against the ice.
f, though not completed, was opened for traffic in June, 1902.
ne fiscal year 1902-3 the sum of $3,083.17 was expended to build the pile d one of the clusters of piles above mentioned, put on more braces on ach and to raise the stone embankment.
is now completed, except raising the stone embankment 2 feet to the harf, and cutting down 6 feet from the top of the hill on road leading to

was carried out by day labour.
expenditure to June 30, 1903, is $9,596.64.

WIARTON.

is situated in the north riding of the County of Bruce, at the head of about 32 miles north of Owen Sound.. It is the terminus of the Geor- Lake Erie branch of the Grand Trunk Railway.
mber 25, 1902, authority was given to expend $1,200 in dredging in front ugar Company's wharf at Wiarton, in order to allow vessels to discharge t place. An agreement was entered into with the Irwin Dredging Com- work required, and they were directed to do 15 days' dredging, removing ds per day of 10 hours. Operations were commenced on September 29, on October 23, 1903.
nber 22, 1902, authority was given to expend $700 to repair the deck of r. Operations were commenced on March 16, 1903, and the repairs com- n June. In doing the work some 27,400 feet B.M. 3-inch cedar plank, M. cedar lumber, and 650 lbs. iron spikes were used.
ure during the fiscal year 1902-3, $1,988.49.

PROVINCE OF MANITOBA.

GIMLI PIER.

the most important Icelandic settlement on the west shore of Lake Win- miles north of the city of Winnipeg.
of repairs to the Gimli pier was proceeded with, and the outer 250 feet rk that had been damaged, and partly carried away were repaired; the side walls was rebuilt, and fully drift-bolted with 1-inch iron; the cribs h stone, and some 4-inch tamarack sheet piling was driven all around the ed to the side timbers, so as to prevent the possibility of the timbers being apart by the action of the ice or waves.
of $3,555.58 was expended in doing the work.

GULL HARBOUR.

on the extension of the Gull pier has been proceeded with. A length of ilt according to the plans adopted in doing the old work.
ll timbers are 10 by 10 inches, the cross-ties 14 inches at the small end. the wharf is 20 feet, the depth of the water at the outer end, 12 feet. the work is fillled in with stone.
nditure during the fiscal year 1902-3 was $2,488.44.

HNAUSA WHARF.

Hnausa is an Icelandic settlement on the west shore of Lake Winnipeg, about 52 miles north of West Selkirk, and 70 miles north of Winnipeg.

The work of extension to the Hnausa wharf was proceeded with during the last fiscal year; an addition 50 feet long to the north wing of the pier was completed.

The side wall timbers were 10 by 10 inches and the cross-ties 14 inches at the small end. It was thought advisable, to prevent any possibility of the waves and ice tearing the timbers apart, to drive 3-inch tamarack sheet piling around the outer face and end of the new work. The cribwork was also ballasted and filled to the top with stone.

Instead of the ordinary waling pieces 2½-inch by 4-inch iron straps were bolted on the sheet piling.

The sum of $2,532.73 was expended on these works.

LAKE FRANCIS.

The Lake Francis work was proceeded with during this last fiscal year. The work of gathering the stone was started early in the fall opposite the site of the first contemplated work, that is, towards the south end of Lake Francis.

The guide piers were built, each 100 feet in length, 20 feet in width, of solid cribwork filled with stone, 4-inch tamarack sheet piling driven both at the ends and sides of the cribwork.

Most of the timber used was spruce, except the sheet piling.

The amount expended during the fiscal year 1902-3 was $6,496.91.

SELKIRK.

Actual work of construction on the proposed extension of 300 feet of this wharf had not been commenced at the end of the fiscal year 1903, but the timber had been ordered, a considerable quantity of which was delivered.

The expenditure for the fiscal year was $4,391.13.

PROVINCE OF BRITISH COLUMBIA.

ANDERSON AND KENNEDY LAKES.

This work is for the purpose of improving the outlets of the above lakes, the former in Alberni and the latter in Clayoquot sound, on the west coast of Vancouver island, to give easier access from salt water to the respective lakes, upon which there are a number of mineral claims under different stages of development, and it is for the purpose of enabling miners to get in their supplies by tracking up their heavy boats without breaking bulk that considerable work has now been done and is now approching completion, with a very satisfactory result to those most concerned.

The following is the expenditure :—

Anderson Lake—		
Wages	$1,055 00	
Provisions	142 80	
Material	200 00	
Transportation	89 00	
		$1,486 80
Kennedy Lake—		
Wages	$1,333 87	
Provisions	216 26	
Material	454 24	
		2,004 39
Total		$3,491 19

PER No. 19

COLUMBIA RIVER (ABOVE GOLDEN).

the late date at which the high water remained, it was not possible to rk of improvement before August 1, 1902. The work was confined to s and cutting the brush and trees back from the edge of the bank be- er, at the foot of Lake Windermere and the lower end of Armstrong's rt distance above Golden, and to the repairs and conversion of the old at' into a pile-driver, which were completed on September 9. From the ne month to October 4 the pile-driver and crew were engaged in length- dams at Red Rock with the most satisfactory results, and a good channel ut through a bar that was one of the worst obstacles to navigation in the vater. Some more mattrassing and stone protection became necessary re connections of the dam at Bolt's channel. From October 10 to 18 a across a channel some six miles below Spillamacheen. This dam is 300 with a 50-foot mattrass or shore connection at each end.
yards of rock, 250 piles, 40 cords of wood, and 2,000 feet of bracing was piled on the bank at Cedar creek landing.
diture in connection with the above work was $7,490.54.

COLUMBIA RIVER (ABOVE REVELSTOKE).

er 15 operations were started on the reef immediately above the steam- some 40 miles from Revelstoke, the removal of which would give a fur- f navigable water for 10 miles.
continued between this point and the head of the canyon, 7 miles above til December 15.
diture in connection with the above work was $4,901.91.

COLUMBIA RIVER (BETWEEN ARROW LAKES).

dredge 'Nakusp,' built for this work, was not completed until December o late for the 30 days' test as required by contract with the constructors, n Works, of Toronto, but, at the solicitation of the Canadian Pacific any, she was provisionally accepted, and as soon as the weather permit- n March, began work and continued until compelled by the rising water end operations.
scal year 1902-3 the expenditure is $6,806.30.

COLUMBIA RIVER (BELOW GOLDEN).

consisted of closing by dam or boom a large lateral channel below Blue- confine the log drive to the main channel. The small appropriation of admit of the first method, so there was substituted a very substantial d of six pieces of square timber, held in place by cross-blocks at inter- securely bolted with ⅞-inch bolts, the cross-section of boom being 50 by ened to clumps of 8 piles, 4 deep and 2 wide, every 100 feet.
diture on the above work was $1,995.47.

DUNCAN RIVER.

ce represents the annual clearing of the upper and lower Duncan rivers clearing the banks of brush and projecting trees, all of which are of ence and caused by the erosion of the banks by the current during high m a serious impediment to navigation during the low stage. The work e in the spring, when the water is at its lowest.
scal year 1902-3 the expenditure is $1,993.56.

FRASER RIVER IMPROVEMENTS.

The existing works were kept in repair and the dredge 'King Edward' and the snag boat 'Samson' at their usual work, the former working at Stevenson.

The appropriation has been apportioned and expended as follows:—

Superintendence, wages, &c.		$3,141 42
Dredge 'King Edward'—		
Wages	$3,535 89	
Provisions	454 47	
Material	116 20	
Coal	949 31	
Contingencies	24 83	
		5,080 70
Snag boat 'Samson'—		
Wages	$1,130 00	
Provisions	187 31	
Material	57 63	
Coal	381 35	
Contingencies	15 58	
		1,771 87
Total		$9,993 99

HARDY BAY WHARF.

Hardy bay is nearly at the northern extremity and on the eastern coast of Vancouver Island. A wharf was built at this place to accommodate the residents on Quatsino Sound on the west coast, some eight miles across, and to facilitate the landing of the mails from the steamers running north from Vancouver and Victoria to Skeena river, Port Simpson, and other places.

The expenditure for the fiscal year was $2,458.

SALMON RIVER.

This service is a continuation of the work of clearing the above river to facilitate the passage of logs cut on its upper reaches. This river empties into Shuswap lake at the station of Salmon Arm on the Canadian Pacific Railway, from which point the department has been extending the work of improvement towards its upper reaches, and a year or two hence should see all the necessary improvements completed.

The expenditure for the past year has been $2,578.76.

Wages	$1,886 10
Provisions	529 86
Material	72 15
Total	$2,488 11

SKEENA RIVER

The work of improvement of this river has hitherto been carried on during the fall and winter months, the men living in quarters erected for this purpose in the immediate vicinity of the work. This manner of conducting the work was practicable, but not altogether satisfactory, while the work was confined to the Kitsilas Canyon—some 80 miles above Port Essington at the mouth of the Skeena river. At the conclusion of the last fiscal year, June 30, 1902, all the work at this point had been completed, as far as was desirable or necessary, with the exception of a few ring bolts at the head of the

PAPER No. 19

ssary for warping up at certain stages of the water. These ring bolts were year and the improvements of the canyon seems to be adequate and meet nents of the steamboat men. Between Kitsilas canyon and Hazelton at the e Skeena, some 80 miles, there are no less than twelve points requiring nd to which the work for this season was confined. As the water was too the summer, the work contemplated was not commenced until October 8. distance of 80 miles between Hazelton and Kitsilas canyon, 37 boulders ed. The work was completed on November 5, and closed for the season. lance of appropriation remaining, some $3,000, was expended in repairs to nd in operations of snagging in the spring of 1903, which, with the increase ber of fishermen and nets, is extending every year further up the river, add- lly to the duties of snag scow, but the result has been satisfactory. The installed last year has proved a great advantage and economy in the conduct f the season's work.

lowing is a statement of expenditure in connection with the above work:—

ages	$4,277 07
visions	900 27
terial	1,498 16
el	342 59
nsportation	392 70
Total	$7,410 79

VICTORIA HARBOUR.

rk consisted principally in dredging done by the hydraulic dredge 'King r the purpose of filling in the James bay flats in the rear of the retaining the same time deepening that portion of the harbour contiguous to that nd subsequently the services of the snag boat 'Samson' were also allowed oval of the pile coffer dam in front of the retaining wall. The work con- the removal of the Tuzo rock was also continued, but not completed. penditure on the above services was $11,499.85.

WILLIAM'S HEAD QUARANTINE STATION.

rk consisted in repairs to the trestle and the renewal of 500 feet of 4-inch pe.

ails of expenditure in connection with the above service are as follows:—

ages	$1,175 76
terials	581 84
Total	$1,757 60

YUKON TERRITORY.

Inspector and Recorders' offices have been erected at the following places:—

anza, at a cost of	$3,515 35
wart City, at a cost of	3,653 82
d Bottom " "	3,714 09
phur " "	2,587 06
	$13,470 32

oof vault has been constructed at the court house at a cost of $3,155.85.

The foundations of the public buildings, which were giving away and thawing, have all been improved with the exception of the court house, which will have to be attended to next fall. Eave troughs and iron ladders have also been placed on the various buildings, both of which are very necessary improvements that were overlooked when the buildings were constructed in the first place.

The following statement shows the cost of maintenance and repairs in connection with the several offices paid out of Yukon Administration vote by the Public Works Department:—

Administration building	$42,120 31	
Court house	12,233 55	
Police court	5,353 62	
Departmental storehouse	1,079 43	
		$60,786 91
Mining Inspector's offices—		
Grand Forks	$ 1,144 00	
Clear Creek	1,039 07	
Hootalinqua	125 00	
Dominion Creek	1,451 15	
Duncan Creek	460 82	
Fortymile	478 20	
Gold Run	660 30	
Glacier Creek	137 25	
Gold Bottom	987 12	
Selkirk	136 00	
Sulphur Creek	789 50	
Stewart City	664 00	
		8,072 41
Post Office, Dawson	$27,311 45	
Post office, Whitehorse	4,771 85	
Miscellaneous expenditure	1,367 70	
Government House	16,536 97	
		49,987 97
		$118,847 29

MEMO.—Addition to the post office, Dawson, for the Telegraph Department is included in maintenance and repairs.

DREDGING OPERATIONS.

he fiscal year 1902-03, dredging was done in the following places :—

PROVINCE OF NOVA SCOTIA.

R.R. Pier.
Coal Mining Co.
and Channel.
Steel and Coal Co. N. Sydney.
Salter's Wharf.
St. Mary's River.
St. Mary's Riv. Bar Sonora.
Hand dredging.

PROVINCE OF PRINCE EDWARD ISLAND.

harf, Belfast.
arbour and channel.
our South.
Murray Harbour R.R. Pier.
" Riv. Channel.

PROVINCE OF NEW BRUNSWICK

tine.
Brigg's Corner.
Flats.
Point du Chêne.
Spring Hill Chapel Bar.
" Russel Bar.

PROVINCE OF QUEBEC.

er.
Island.
l.
ing.
ding.
l.
Lake Témiscamingue.
Lachine.
Lavaltrie.
Nicolet.
Nicholas Island.
Notre Dame de Pierreville.
Papineauville.
Pointe Claire.
Richelieu River.
St. Maurice River.
Sorel.
Three Rivers.
Valleyfield.

PROVINCE OF ONTARIO.

n.
.
Kaministiquia River.
Kingston.
Newcastle.
Pickering.
Prescott.
Port Arthur.
Port Hope.
Rondeau.
Wolf Island.

PROVINCE OF MANITOBA.

River.
Mouth of Red River.

PROVINCE OF BRITISH COLUMBIA.

ver.
10½
Victoria Harbour.

PROVINCE OF NOVA SCOTIA.

DREDGING AT DIGBY.

Digby, the shire town of the county of Digby, with a population of about 1,500, is beautifully situated on the south-west end of the Annapolis Basin. It is an important station of the Dominion Atlantic Railway, 67 miles north from Yarmouth, 150 from Halifax, 20 miles from Annapolis, and is also a port for arrival and departure of the daily steamers of the Dominion Atlantic Railway, plying between St. John, New Brunswick and Digby. The harbour is open at all seasons, and well protected from nearly all quarters. Previous to the present fiscal year, $5,187.74 had been expended in improving the basin and entrance to the Digby pier; the work was continued from July 1 to July 13, 1902. During that time, the dredge 'Cape Breton' removed the further quantity of 11,760 cubic yards sand, gravel and mud, at a cost of $538.60, or 4·58 cents per cubic yard, forming a basin 675 feet by 300 feet, and a channel 60 feet wide, 275 feet long at the side of the pier out toward deep water.

DREDGING AT INTERCOLONIAL COAL MINING CO. PIER.

Pictou Harbour, Pictou county, is the finest on the southern shore of the Gulf of St. Lawrence, eastward of Gaspé. The valuable coal mines and stone qaurries in the vicinity, and the finely settled and fertile country enhances its importance.

On the north shore of the harbour, along the declivity of a ridge, the town of Pictou, is situated, opposite which the harbour expands into three large arms, and at the heads of these are East, Middle and West rivers. Pictou is the eastern terminus of a branch of the Intercolonial railway, and of the Oxford and Pictou branch, and is 113 miles north-east of Halifax. It is well built, having many good stores, several hotels branch banks, factories, sawmills, iron foundry and machine shop, lumber yards, marble works, stone quarries, and other industries. Here are also an academy, library, masonic hall, several churches, &c. The town has a population of about 3,500 and an extensive trade ; the annual exports of coal are very large. The Prince Edward Island Navigation Company make Pictou a terminus for their steamers, and it is a place of call for other lines.

The dredging done by the department at Pictou was at several localities in the harbour to facilitate shipping, &c., improving the approaches to the wharfs, and deepening at and around them for berths. Pictou has a marine slip, with two cradles capable of hauling large vessels with skilled labour for repairs, &c.

During the fiscal year 1902-03 the Intercolonial Coal Mining Co. built a new loading pier at or near Abercrombie Point in the East river, to facilitate their increased coal shipments, where the dredge 'St. Lawrence' was engaged from October 14 to December 9, 1902, and from April 16 to June 1, 1903, improving the channel and berths at loading pier, removing 39,200 cubic yards, at a cost of 8·40 cents per yard, or $3,294.52

DREDGING AT INTERCOLONIAL RAILWAY PIER, PICTOU COUNTY.

The dredge 'Geo. McKenzie' was engaged in deepening the water in front of this pier from November 22 to December 9, 1902, and removed 1,440 cubic yards, at a cost of 73·89 cents per cubic yard, or $1,064.12; the cost of towing the dredge and barge

PAPER No. 19

St. John included in this, and stormy weather will account for the cost per

dge 'St. Lawrence' was engaged in completing this work from June 5 to 3, removing 8,400 cubic yards at a cost of 4·51 cents per yard, or $379.17.

DREDGING AT LIVERPOOL.

n of Liverpool, at the head of Liverpool bay, on the south-east coast of , is in the County of Queen's, and has a population of about 2,500; taking e of Milton, 2 miles farther up the river, and where there are important s population is increased to about 4,000. These places carry on an exten- ith Halifax, the United States and the West Indies. Liverpool harbour is over. Spring tides rise 8 feet, and neap tides 5 feet. The dredging done our previous to the fiscal year 1902-3, by the department, was near the he River Mersey, abreast the town. A bar, over which there was but 5 feet, d to give a channel 13 feet deep, 175 feet wide, and improve the harbour approaches to the wharfs, a toal quantity of 33,730 cubic yards of sand, dust being removed at a cost of $9,960.70. Filling in having taken place, Canada' operated on this bar from April 27 to June 30, 1902, removing quantity of 9,900 cubic yards of sand, silt and sawdust, at a cost of 42·96 cents per cubic yard, and was continuing the work. During the 902-3 the dredge 'Canada' continued the work from July 1 to December l from April 25 to June 30, 1903, removing 37,350 cubic yards at a cost of 19·73 cents per cubic yard, and giving a channel through the bar 175 feet t deep at low water spring tides, and same depth up the harbour. The the Marine slip was also dredged, the work being continued at the close of

AT THE NOVA SCOTIA STEEL AND COAL COMPANY'S PIER, NORTH SYDNEY, CAPE BRETON COUNTY.

Harbour is on the north-east coast of Cape Breton. It is 3 miles wide at out at 5 miles within the lighthouse, on Flat Point, the navigable channel the breadth of half a mile between the two bars of sand and shingle which the shore on either side. Inside these bars the harbour divides into two the west and south arms. The harbour is easy of access, and is capable g any number of large vessels in safety. It is closed by ice between the mber and the beginning of May.

n of Sydney stands on the east side of the south arm, and is the shipping veral coal mines.

Sydney, distant 5½ miles, is on the north side of the west arm, and is also a ipment for large quantities of coal. The anchorage is sheltered by the orth-westerly winds throw a heavy sea upon the bar and washes the sand rbour. From April 29 to May 29, 1902, the dredge 'St. Lawrence' was pening to 27 feet, where possible, at the front and sides of the Nova Scotia Coal Company's piers at North Sydney, removing 10,150 cubic yards of old timbers and silt at a cost of $2,124.06, or 20·92 cents per cubic yard, improving the facilities for shipping the output from their mines.

the fiscal year 1902-3 the dredge 'Geo. McKenzie' was engaged from May 22 in further improving at the Nova Scotia Steel and Coal Company's t their ore pier, removing 5,040 cubic yards at a cost of $2,202.93, or 43·70 ubic yard.

DREDGING AT SALTER'S WHARF, NORTH SYDNEY, CAPE BRETON COUNTY.

The dredge 'Geo. McKenzie' worked, improving the depth of water in front of Salter's wharf, from June 23 to 25, 1903, removing 630 cubic yards at a cost of $153.38, or 24·34 cents per cubic yard.

DREDGING AT ST. MARY'S RIVER, GUYSBORO' COUNTY.

St. Mary's river flows into the Atlantic ocean, 112 miles E.N.E. of Halifax. Large quantities of deals and other lumber are shipped from here. At the mouth of the river is a sand bar or shoal about 1,800 feet across, from 15 feet depth outside to 15 feet inside the bar. The dredge 'St. Lawrence' was engaged from July 11 to November 17, 1900, and from May 3 to June 30, 1901, in dredging this bar to 15 feet at low water spring tides, removing 47,687 cubic yards of sand, gravel and boulders; and from July 1 to 14, 1901, and June 9 to 30, 1902, continued the work, removing a further quantity of 8,925 cubic yards of sand and gravel at a cost of $2,749.99, or 30·81 cents per cubic yard, and the work is being continued on the bar and on a shoal a distance up the river.

The 'St. Lawrence' continued the work on the bar during the fiscal year 1902-3. from July 1 to October 13, removing 5,628 cubic yards at a cost of $1,245.55, or 22.13 cents per yard; and up the river removing the quantity of 25,200 cubic yards at a cost of $2,336.75, or 9·27 cents per cubic yard, when the work was closed, and the dredge left for Pictou.

DREDGING BY HAND AT THE RACQUETTE, DIGBY COUNTY.

Hand dredging was performed in front of the wharfs at the Racquette from August 7 to September 13, removing 1,645 cubic yards of sand at a cost of 30·17 cents per yard.

PROVINCE OF PRINCE EDWARD ISLAND.

DREDGING AT HALLIDAY'S WHARF, BELFAST, QUEEN'S COUNTY.

The dredge 'Prince Edward' was employed from June 18 to 30 removing 2,070 cubic yards mud and sand around Halliday's wharf, at a cost of 47·61 cents per cubic yard, and preparing a place of shelter for vessels there with a depth of 8 feet of water at low tide.

DREDGING AT MONTAGUE RIVER, KING'S COUNTY.

The dredge 'Prince Edward' was engaged in the channel and at the wharfs here from August 30 to December 10, 1902, and from April 30 to June 17, 1903, in removing 39,195 cubic yards at a cost of 17·23 cents per cubic yard, and improving the channel to 10 feet at low water spring tides, leaving work unfinished.

DREDGING AT MURRAY HARBOUR, KING'S COUNTY.

The dredge 'Prince Edward' was engaged in the channel and at the wharfs here from July 1 to 18 and August 17 to 22, 1902, in removing 6,952 cubic yards sand and mud at a cost of 16·95 cents per cubic yard, and improving the channel to 10 feet at low water.

PAPER No. 19

DREDGING AT MURRAY RIVER RAILWAY, KING'S COUNTY.

dge 'Prince Edward' was engaged in dredging a foundation for a pier at s of the Murray river branch railway from July 19 to August 16, removing yards sand and clay at a cost of 20·29 cents per yard.

DREDGING AT MURRAY HARBOUR SOUTH, KING'S COUNTY.

dge 'Prince Edward' was engaged from August 23 to 29 at Murray Har- improving the depth of water in the channel in front the steamboat wharf, removing 1,800 cubic yards at a cost of 18·26 cents per cubic yard.

PROVINCE OF NEW BRUNSWICK.

DREDGING AT CAPE TORMENTINE.

ormentine, a headland of New Brunswick, in Northumberland strait, in the Westmoreland, 22 miles from Sackville. The Anglo-American Submarine Cable crosses the strait here to Cape Traverse, Prince Edward Island, and ice the mail and passengers during the winter, the distance from shore to shore It is intended to have steamship communication during summer and winter oint if possible. It is the terminus of the New Brunswick and Prince and Railway. Has a post office, telephone, telegraph, good harbour, one Dominion Express, lobster factories and one church. Farming and fishing n successfully. A large number of vessels load here for foreign ports with r, products of the sea and farm. From July 14 to October 31, 1902, the pe Breton' was engaged at Cape Tormentine opening a channel for the n service from deep water into and alongside the pier and improving the the pier, for the accommodation of large sailing vessels and ocean steam- cubic yards were removed at a cost of $6,339.33, or 18·5 cents per yard. was lost by winds and bad weather.
tides rise 6 feet, neaps, 3 feet.

REDGING AT CHIPMAN'S BRIDGE TO BRIGG'S CORNER, QUEEN'S COUNTY.

Chipman's Bridge to Brigg's Corner is a distance of about 13,300 feet, and ter point quantities of lumber are manufactured, which with logs cut and n the Salmon river, seek export at St. John harbour. During the summer water in Salmon river is very shoal, in places merely a rivulet, necessitating mber being thrown into the water and floated down below Chipman bridge, placed on scows or in small vessels, and taken to St. John for export. Plac- ly sawn lumber in the water causes it to discolour and become dark while transport, and therefore deteriorates in value. To remedy this, the dredge inion' was engaged from April 28 to June 30, 1901, while the freshet the river, and improved the same to enable the removal of lumber by barges latter date had removed 29,300 cubic yards of mud, sand and silt to a place of cost of 11·65 cents per cubic yard, and giving good satisfaction as far as the een proceeded with. During the fiscal year 1901-02 the work was continued 1 to 24 and October 24 to 30, and again from April 15 to June 30, 1902, he further quantity of 50,375 cubic yards at a cost of 11·20 cents per cubic

During the fiscal year 1902-03 the work was continued from April 30 to June 22, removing 24,600 cubic yards at a cost of 9·45 cents per cubic yard, when under instructions the work was closed.

DREDGING AT GRAND LAKE FLATS.

This large, important and beautiful lake, in Queen's county, has a length of over 25 miles, and a breadth of 6 miles. Its outlet is the Jemseg, a small but deep stream flowing into the River St. John opposite Gagetown, and about 35 miles from St. John city. The principal affluents of the lake are Salmon and Newcastle rivers, the former navigable for 10 miles from its mouth for steamers, and 75 miles for canoes, the latter 48 miles for canoes. On the banks of these rivers and the lake are extensive coal veins. Salmon, gaspereau and trout and other fish abound in the lake and streams flowing into it. The scenery is beautiful. Grand lake has on its banks several flourishing villages, fine farms and various industries.

At the southern end or outlet of Grand lake there are extensive mud flats, which were an obstruction to navigation. The local government opened a channel through these flats, over a mile in length, some years ago.

The work of the department with the dredge 'New Dominion' on Grand lake commenced in 1875-6, in lengthening to 1½ miles, deepening to 12 feet and otherwise improving this channel, and in improving the approaches to the public landing places of the small villages of McMann's Cove, Newcastle and Salmon River, on the banks of the lake near its northern and north-eastern extremities. Steamers from St. John call at the various landing places on this lake to its northern extremity, and many of them are growing summer resorts. Dredging was done in the years 1875-6, '76-7, '82-3, '86-7, '87-8, '89-90, and the total amount performed is 93,555 cubic yards removed at a cost of $16,372.96. The work was continued from July 1 to November 8, 1902, and June 23 to 30, 1903, improving the channel to 10 feet at low summer level, and 75 feet in width, and at the close of this fiscal year 60,137 cubic yards had been removed at a cost of 8·38 cents per cubic yard. The work is still progressing.

DREDGING AT POINT DUCHENE, WESTMORELAND COUNTY.

On Northumberland strait, the north-east terminus of the Shediac branch of the Intercolonial Railway, 2 miles from Shediac. It has long piers for shipping and range lights on Shediac island (at the entrance) and on the pier head.

The Prince Edward Island Steam Navigation Company steamers run every day between this port and Summerside, P.E.I., while navigation is open, and connects with the trains. There are several stores, two or three hotels, telegraph and express offices, &c., and a population of about 250. Here is Shediac harbour, the easiest of access and egress on this part of the coast. It is superior to Buctouche and Cocagne in the depth over the bar, and more extensive than the latter. The mooring frontage for ships of 12 to 17 feet draught being ¾ of a mile in length, from two to three cables wide, and well sheltered. The country about Shediac is fertile and well settled. The improvement of the channel from Chene Spit into and along the piers by dredging has occupied the attention of the department for several years. In 1874-5 the 'Canada' worked here; also in 1882-3, and 1883-4, and in 1890-1, the dredge 'St. Lawrence,' giving a total amount excavated to that date of 69,700 cubic yards at a cost of $21,-125.92. A depth of 15 feet at low water spring tides was made. Spring tides rise 4 feet, neaps 2 feet.

The dredge 'Cape Breton' was engaged here from November 1 to 30, 1902, and May 11 to June 30, 1903, in completing a 15-feet channel 100 feet wide at low water, from the line of range lights on Shediac island to the outer end of the public wharf, and a basin in front of the wharf to 19 feet at low water 360 feet in length, 140 feet

APER No. 19

ıg 40,110 cubic yards at a cost of $4,915.80, or 12·25 cents per yard, and ecuting the work at the close of the fiscal year.

DREDGING AT SPRINGHILL, YORK COUNTY.

was continued here on the Russell bar from July 1 to 13, and August 25 7, 1902, and April 30 to June 30, 1903, removing 28,885 cubic yards gravel cost of 16·59 cents per cubic yard. The work is being further prosecuted.

MARITIME PROVINCES, DREDGES.

The Dredge 'St. Lawrence.'

cing the fiscal year 1902-03, the dredge 'St. Lawrence' was operating at ver, Guysboro' county, N.S., on the bar at the entrance, and a distance up proving the depth of the water over the bar to 15 feet at low water, and up 13 feet, and continuing the work until October 13, when the dredge was e Intercolonial Coal Mining Company's works at Abercrombie Point, on r, Pictou county, where it was engaged to December 9, in dredging for s around the new pier at that place. At the last named date, the dredge nto winter quarters at C. Dwyer's wharf; examined boiler and had neces- made. On examining the buckets, they were found worn past repair, st steel bottoms; tenders were received and a new set contracted for; a set ins, and a set of link bushings were put in, engines, condenser pumps and chinery overhauled, the lost motion taken up and renewals made where ll repairs being completed, the dredge resumed work on the East river, Point, at the Intercolonial Coal Mining Company's piers, Pictou county, il 16, where it continued until June 1, when work at that place was com- he dredge removed to the marine slip to clean and paint. The slip not on June 5, work was commenced at the Intercolonial Railway pier, and the 20th, when the dredge was placd on the marine slip, cleaned and was launched on June 30, and is under orders for work on the Richibucto nty, N.B.

The Dredge 'Canada.'

ommencement of the fiscal year 1902-03 this dredge was operating on the pool, Nova Scotia, where it continued until December 13, when it was winter quarters. During the winter, engines, boilers, pumps, condenser, machinery were overhauled and necessary repairs made. Two new cylin- place of those condemend on the winches; new mouthpieces or lips were full set of buckets. Repairs being fully completed, work resumed on the nel at Liverpool, N.S., where it was prosecuting the work at the close of

The Dredge 'New Dominion.'

dge was continuing the work at Grand Lake Flats at the commencement ear 1902-03, where it continued until November 8, when it was placed in ers. Boiler, engines, pumps, winch and all machinery examined and d repair; also the scows, so far as possible, but they are worn out, and new equired before commencing another season's work. On April 30 work was he Salmon river between Chipman and Brigg's Corner, Queen's county, ntinued until June 22, when the river had fallen too low to float out the der orders the dredge resumed work on June 23, on the Grand Lake Flats, vigorously prosecuting the same at the close of the fiscal year.

The Dredge 'Prince Edward.'

The dredge 'Prince Edward' was, at the commencement of the fiscal year 1902-03, engaged in improving the channel at Murray river, King's county, Prince Edward Island, where it continued until July 18, when, under orders, the preparing of the foundation for a terminus pier for the Murray Harbour branch railway was undertaken, and by August 16, completed. Work was resumed on August 17, and continued August 22 improving the river channel. On the 23rd, the dredge was removed to and worked at Murray Harbour south until the 29th, improving the depth of water in front the steamer 'Electra's' wharf there. Under orders, the dredge was removed to and worked on the Montague river from August 30 to December 10, when it went into winter quarters, and during the winter much necessary repairs were made to engines, boiler, machinery, hull scows and water scow. The dredge went to work on the Montague river,and continued improving the channel there until June 17, when it was removed to Halliday's wharf, Belfast, Queen's county, Prince Edward Island, and worked from June 18 to 30, and was then continuing the work there.

The Dredge 'George McKenzie.'

The new hull for this dredge was completed, and under orders it proceeded from River St. John (as soon as tugs could be procured) to Pictou, N.S., where it worked from November 22 until December 9, at which time ice made in the river, and the dredge went into winter quarters at Dwyer's wharf. During the winter, boiler, engine and dredging machinery were overhauled and placed in working order. The dredge proceeded to North Sydney, Cape Breton county, N.S., where it worked at the Nova Scotia Steel and Coal Company's coal and ore piers from May 13 until June 22, and June 23 to 25 at Salter's wharf, when orders were given and it proceeded to Mabou, Inverness county, N.S., and was on the voyage at the close of fiscal year.

The Dredge 'Cape Breton.'

At the commencement of the fiscal year 1902-3 this dredge was prosecuting the work at Digby county, N.S., and continued work until July 13 (work unfinished), when under orders it left for Cape Tormentine, Westmoreland county, N.B., where it worked until October 31, and then proceeded to Point du Chene, same county, and worked from November 1 to 30, when it was placed in winter quarters at the railway wharf there. During the winter, necessary repairs were made to the machinery, engines, boiler, pumps and condenser, the largest repairs being made on the dredge's bucket. In the spring the work at Point du Chene was resumed on May 11, and was in vigorous operation at the close of the fiscal year.

The Dredge 'New Brunswick.'

This dredge, at the commencement of the fiscal year 1902-3, was prosecuting the work on Russell and Chapel bars above Springhill, on the St. John river, and continued there until November 7, when it was ordered into winter quarters at St. John. During the winter, necessary repairs were made to hull, boiler and machinery; also to dredge's scows. All of which being completed, the dredge proceeded up the river on April 30, and resumed work on the Russell and Chapel bars, and was continuing the same with good success at the close of the year.

The Steam Launch 'Cricket.'

Attended the dredge 'New Brunswick' during the year. Repairs were made during the winter to the hull, engines, boiler, &c., and a new wheelhouse was built.

APER No. 19

Hand Dredging.

acquette, Digby county, N.S., hand dredging was performed in front of that place.

of the quantities removed by the several dredges and by hand in the Maritime provinces during the fiscal year 1902-3.

	Cubic Yards.
Lawrence'	78,428
ada'	37,350
Dominion'	84,737
ce Edward'	55,943
McKenzie' (not in commission—new hull building)	7,110
e Breton'	86,990
Brunswick'	37,240
dredging	1,645
	389,443

DREDGING PLANT.

wing is a summary description of the dredging plant owned and operated Works Department in the Maritime provinces :—

he self-propelling Elevator Dredge 'St. Lawrence' (iron hull).

th over all—175 feet.
n—30 feet.
ght when loaded aft—13·5 feet.
ght when loaded forward—8·5 feet.
t working depth (ladder with 32 buckets dropped 30 feet from bow)—
8·5 feet.
test working depth (bucket ladder dropped 40 feet from bow)—28·0 feet.
city of hopper for spoil material—350 cubic yards.
d when light—6 to 7 miles per hour.
d when loaded—3 to 4 miles per hour.
y rate of dredging:
Hard material—350 to 700 cubic yards.
Ordinary earth—750 to 1,000 cubic yards.
Soft material—1,050 to 1,400 cubic yards.

The self-propelling Elevator Dredge 'Canada' (iron hull).

th over all—130 feet.
n—20 feet.
ght when loaded aft—11·5 feet.
ght when loaded forward—7·0 feet.
t working depth—7·0 feet.
test working depth (ladder 24 buckets)—16·0 feet.
city of hopper for spoil material—90 cubic yards.

Speed when light and newly painted—6 to 7 miles per hour.
Speed when loaded—3 to 4 miles per hour.
Daily rate of dredging:
In hard bottom—180 to 270 cubic yards.
With ordinary digging—180 to 360 cubic yards.
In soft material—360 to 450 cubic yards.

The Spoon Dredge 'New Dominion' (wooden hull).

Length over all—90 feet.
Width—28 feet.
Draught—5½ feet.
Greatest working depth—21 feet.
Daily rate of dredging:
In hard material—300 cubic yards.
With ordinary material—450 cubic yards.
In soft material—600 to 700 cubic yards.
Number of dump scows or barges used—4 (2 are condemned).

The Spoon Dredge 'Prince Edward' (wooden hull).

Length over all—80 feet.
Width—28 feet.
Draught—6 feet.
Greatest working depth—21 feet.
Daily rate of dredging:
Hard material—300 cubic yards.
With ordinary material—500 cubic yards.
In soft material—600 to 700 yards.
Number of dump scows or barges used—3.

The Spoon or Dipper Dredge 'George McKenzie' (wooden hull).

Length—90 feet.
Width—28 feet.
Draught—6 feet.
Greatest working depth—22 feet.
Daily rate of dredging:
In hard material—350 cubic yards.
Ordinary material—500 cubic yards.
In soft material—600 cubic yards.
Number of dump scows or barges used—3.

The Boom and Dipper Dredge 'Cape Breton' (steel hull).

Length—91 feet.
Beam—36 feet.
Draught—7½ feet.
Greatest working depth—34 feet.
Daily rate of dredging:
In hard material—1,000 cubic yards.
Ordinary material—1,500 cubic yards.
Soft material—2,000 yards.
Number of barges used (each of 210 cubic yards capacity, steel)—2.

L PAPER No. 19

The Clam Shell Dredge 'New Brunswick' (wooden hull).

ength over all—90 feet.
Vidth—25 feet.
raught—2½ feet.
reatest working depth—17 feet.
aily rate of dredging:
In hard material—180 cubic yards.
Ordinary material—300 cubic yards.
Soft material—450 cubic yards.
umber of decked scows used—3.

ile driver, engine and boiler fitted on scow.
one lifter, engine and large grips (no boiler).
old) small scow for coal, belonging to 'New Dominion,' at St. John, con-
mned.
ld side hopper scows at Pictou, unfit for use, belonging to 'Prince Edward.'
d side hopper scow, unfit for use, belonging to 'Geo. McKenzie,' at Pictou.

bove scows condemned, rotten and useless, have been broken up, and any
use saved.)

CLASSIFICATION of Disbursements of the Dredges in the Maritime Provinces during the Year ending June 30, 1903.

DREDGE 'ST. LAWRENCE.'

ITEMS.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Total.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	483 33	477 43	483 33	483 33	425 30	463 59	324 32	248 29	296 23	443 12	483 33	483 33	5,094 93
Coal	255 63	304 15	292 60	367 77	135 00	141 00			72 63	262 50	330 00	90 00	2,251 28
Provisions	128 39	159 65	106 80	141 86	103 42	104 14	26 45			136 59	124 11	136 63	1,167 04
Stores	10 55	25 00		4 70	13 38	9 72				33 89		64 56	161 80
Equipment	2 78								59 65	10 00			72 43
Water				4 50	1 80					23 20			29 50
Repairs			37 35	171 92		101 95	122 33	29 18	591 90	491 82	25 00	850 67	2,422 12
Pilotage	78 00	78 00	78 00	89 79	75 00	21 00				45 00	78 00	60 00	602 79
Towage													
Wharfage	57 00		57 00	14 00									128 00
Contingencies	60 00	9 09		7 19			22 07	3 20	18 47	11 90	4 67		136 59
Totals	1,075 68	1,053 32	1,055 08	1,285 06	753 90	841 40	494 17	280 67	1,038 88	1,458 02	1,045 11	1,685 19	12,066 48
Working expenses	1,075 68	1,053 32	1,017 73	1,113 14	753 90	739 45	12 50	Nil.	132 28	966 20	1,020 11	834 52	8,718 33
Repairs ordinary	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	491 82	25 00	850 67	1,367 49
" extraordinary	Nil.	Nil.	37 35	171 92	Nil.	101 95	481 67	280 67	906 60	Nil.	Nil.	Nil.	1,980 16
Totals	1,075 68	1,053 32	1,055 08	1,285 06	753 90	841 40	494 17	280 67	1,038 88	1,458 02	1,045 11	1,685 19	12,066 48

Stores	7 41	18 66	23 73	40 30	19 97	15 88			196 12	40 28	8 77	72 19	443 31
Equipment	47 16	29 48						70 35	26 75		74 23		247 97
Water	5 00	5 00	5 00	5 00		2 50				5 00	5 00	5 00	37 50
Repairs	120 58		100 21		83 30	232 60	167 54	104 72	355 27	1,337 56	16 81	369 55	2,888 14
Pilotage	54 00	52 00	52 00	54 00	50 00	24 00				14 00	52 00	50 00	402 00
Towage													
Wharfage	15 00	15 00	15 00	15 00	15 00	7 50			50 00	12 00	12 00	15 00	171 50
Contingencies	5 85	3 27	6 74	4 57	5 03	2 43		8 74		4 78	6 76	2 16	50 33
Totals	1,097 53	902 66	1,037 34	928 61	895 71	751 68	379 54	395 81	840 14	1,906 09	1,028 90	1,323 77	11,487 78
Working expenses	976 95	902 66	937 13	928 61	812 41	519 08		70 35	222 87	556 26	1,012 09	954 22	7,892 63
Repairs, ordinary										1,337 56	16 81	369 55	1,723 92
" extraordinary	120 58		100 21		83 30	232 60	379 54	325 46	617 27	12 27			1,871 23
Totals	1,097 53	902 66	1,037 34	928 61	895 71	751 68	379 54	395 81	840 14	1,906 09	1,028 90	1,323 77	11,487 78

DREDGE 'NEW DOMINION.'

Wages	355 00	370 00	370 00	369 51	271 00	167 01	134 13	129 64	480 51	282 91	370 00	370 00	3,669 71
Coal		201 88								308 18		184 52	694 58
Provisions	67 25	79 25	68 03	90 62	18 01					81 68	96 71	39 65	541 20
Stores										55 55	89 65		145 20
Equipment						49 10				61 71	70 09		180 90
Water													
Repairs		17 39	29 26		2 72	32 39		250 51	145 50	33 51	28 44	4 90	544 62
Pilotage													
Towage	520 00	500 00	545 00	470 00	227 50	5 00				200 00	504 50	780 00	3,752 00
Wharfage													
Contingencies		6 10	1 87	27	1 38	9 48				2 12		2 22	23 44
Totals	942 25	1,174 62	1,014 16	930 40	520 61	262 98	134 13	380 15	626 01	1,025 66	1,159 39	1,381 29	9,551 65
Working expenses	942 25	1,157 23	984 90	930 40	517 89	63 06				928 27	1,130 95	1,376 39	8,031 34
Repairs, ordinary			29 26		2 72	32 39				3 30	28 44	4 90	101 01
" extraordinary		17 39				167 53	134 13	380 15	626 01	94 09			1,419 30
Totals	942 25	1,174 62	1,014 16	930 40	520 61	262 98	134 13	380 15	626 01	1,025 66	1,159 39	1,381 29	9,551 65

CLASSIFICATION of Disbursements of Dredges in the Maritime Provinces, &c.—*Continued.*

DREDGE 'NEW BRUNSWICK.'

Items.	July.	August.	September	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Total.
	$ cts.	$ cts.	$ cts	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts,	$ cts.	$ cts.	$ cts.	$ cts.
Wages	470 00	417 67	405 27	442 60	293 09	175 39	244 26	241 52	277 11	319 80	427 59	574 33	4,288 63
Coal	113 91	.....	175 80	48 42	.....	.....	.....	.....	.....	280 56	.....	133 00	751 69
Provisions	212 64	184 33	172 54	186 28	62 55	.....	.....	.....	.....	56 85	183 48	238 33	1,297 00
Stores	8 40	.....	14 40	21 73	.....	3 82	.....	.....	4 53	74 71	51 69	2 74	182 02
Equipment	.....	.....	.....	72 30	.....	.....	.....	.....	.....	.....	230 47	75 50	378 27
Water	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Repairs	.....	72 62	136 35	5 09	81 99	49 11	33 88	99 12	281 20	109 84	52 15	71 64	992 99
Pilotage	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Towage	113 61	290 63	268 28	116 58	317 29	.....	.....	.....	.....	200 00	189 32	.....	1,495 71
Wharfage	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19 25	19 25
Contingencies	10 00	2 50	.....	.....	.....	8 93	.....	.....	.....	2 55	.....	7 01	30 98
Totals	928 56	967 75	1,172 64	893 00	754 92	237 25	278 14	340 64	562 84	1,044 31	1,134 70	1,121 80	9,436 55
Working expenses	928 56	862 73	1,036 29	882 91	672 93	48 37	Nil	Nil	Nil	839 21	1,082 55	1,102 35	7,455 90
Repairs ordinary	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	84 42	52 15	19 45	156 02
" extraordinary	Nil	105 02	136 35	10 09	81 99	188 88	278 14	340 64	562 84	120 68	Nil	Nil	1,824 63
Totals	928 56	967 75	1,172 64	893 00	754 92	237 25	278 14	340 64	562 84	1,044 31	1,134 70	1,121 80	9,436 55

HAND DREDGING.

Wages	.....	172 61	140 27	.....	.....	.....	.....	.....	.....	.....	.....	.....	312 88
Equipment	76 38	.....	29 41	.....	.....	.....	.....	.....	.....	.....	.....	.....	105 79
Towage	.....	15 00	15 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	30 00
Contingencies	.....	47 71	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	47 71
Totals	76 38	235 32	184 68	.....	.....	.....	.....	.....	.....	.....	.....	.....	486 37
Working expenses	76 88	235 32	184 68	.....	.....	.....	.....	.....	.....	.....	.....	.....	496 38
Repairs, ordinary	Nil	Nil	Nil	.....	.....	.....	.....	.....	.....	.....	.....	.....	Nil
D. V. repairs and wintering	Nil	Nil	Nil	.....	.....	.....	.....	.....	.....	.....	.....	.....	Nil
Totals	76 38	235 32	184 68	.....	.....	.....	.....	.....	.....	.....	.....	.....	496 38

Water	68 65	25 00	94 62	61 87	25 00	27 87	16 25					64 62	383 88
Repairs	95 12	60 49	10 00		41 99	460 82	31 39			558 54	318 07	561 33	2,137 75
Pilotage			20 00									2 00	22 00
Towage	650 00	94 42	1,225 00	650 00	600 00	375 00				125 00	600 00	1,072 82	5,392 24
Wharfage	54 00	1 25	93 00	31 00		47 00	17 45			20 00	31 00	20 50	315 20
Contingencies		8 87	19 24	20 61	3 00	4 45			8 75	24 00		39 67	128 59
Totals	1,549 78	667 93	2,407 56	1,305 22	1,052 03	1,460 45	243 28	150 00	437 33	1,670 57	1,453 18	2,787 76	15,185 09
Working expenses	1,316 78	607 44	2,397 56	1,305 22	1,010 04	999 63	93 28			526 70	1,135 11	2,226 43	11,618 19
Repairs, ordinary	18 42					425 57				387 15	318 07	561 33	1,710 54
" extraordinary	214 58	60 49	10 00		41 99	35 25	150 00	150 00	437 33	756 72			1,856 36
Totals	1,549 78	667 93	2,407 56	1,305 22	1,052 03	1,460 45	243 28	150 00	437 33	1,670 57	1,453 18	2,787 76	15,185 09

DREDGE 'GEO. McKENZIE'.

Wages				175 50	258 06	300 33	157 50	150 00	155 00	204 41	394 99	396 50	2,192 29
Coal				103 91						21 00			124 91
Provisions					41 56	24 19	44 00			61 50	83 73	169 58	424 56
Stores					82 41	8 68				85 25			176 34
Equipment	163 76			2 84								499 45	666 05
Water				1 50								41 00	42 50
Repairs					636 42		15 20	62 03		52 69	9 00	42 14	817 48
Pilotage													
Towage					350 00	387 50					662 90	720 00	2,119 50
Wharfage													
Contingencies				3 02	8 61		5 35			4 27	6 23	9 85	37 33
Totals	163 76			286 77	1,377 06	720 70	222 05	212 03	155 00	429 12	1,155 95	1,878 52	6,600 96
Working expenses	163 76			286 77	740 64	720 70	49 35			376 43	1,146 95	1,836 38	5,320 98
Repairs, ordinary										52 69	9 00	42 14	103 83
" extraordinary					636 42		172 70	212 03	155 00				1,176 15
Totals	163 76			286 77	1,377 06	720 70	222 05	212 03	155 00	429 12	1,155 95	1,878 52	6,600 96

CLASSIFICATION of Disbursements of Dredges in the Maritime Provinces, &c.—*Continued.*

'CAPE BRETON'

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand totals.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	433 98	435 00	425 61	433 01	417 05	316 45	135 51	160 50	180 00	287 11	427 94	435 00	4,087 16
Coal	238 93	6 60	90 75	193 20	.....	46 51	.....	107 54	.....	127 65	86 25	88 80	986 23
Provisions	209 00	59 32	193 15	125 70	31 95	72 07	28 71	.....	.....	43 71	123 10	111 39	998 10
Stores	16 50	.....	.....	53 73	.....	.....	18 56	.....	.....	133 01	.....	14 22	236 02
Equipment	115 38	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	297 11	412 49
Water	.....	16 25	.....	35 00	25 00	.....	.....	.....	.....	.....	21 00	27 00	124 25
Repairs	400 26	.....	22 32	.....	109 89	4 66	.....	155 05	4 56	756 76	116 61	7 70	1,577 81
Pilotage	.....	.....	.....	.....	22 59	.....	.....	.....	.....	.....	6 00	6 00	34 59
Towage	260 50	325 00	3,474 09	675 00	184 28	928 74	.....	.....	.....	.....	450 00	941 88	7,239 49
Wharfage	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Contingencies	2 40	7 26	.....	.....	.....	12 99	.....	9 35	.....	.....	10 70	2 99	45 69
Totals	1,676 95	849 43	4,205 92	1,515 64	790 76	1,381 42	182 78	432 44	184 56	1,348 24	1,241 60	1,932 09	15,741 83
Working expenses	1,276 69	849 43	4,183 60	1,515 64	680 87	1,376 76	39 77	107 54	.....	574 84	1,124 99	1,924 39	13,654 52
Repairs, ordinary	.....	.....	.....	.....	4 99	4 66	.....	.....	.....	88 13	116 61	7 70	222 09
" extraordinary	400 26	.....	22 32	.....	104 90	.....	143 01	324 90	184 56	685 27	.....	.....	1,865 22
Totals	1,676 95	849 43	4,205 92	1,515 64	790 76	1,381 42	182 78	432 44	184 56	1,348 24	1,241 60	1,932 09	15,741 83

Description of Material Dredged.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Total.
	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.
Clay and mud				5,250	7,350						700		13,300
Clay				1,050									1,050
Clay and gravel											700		700
Sand—ordinary	12,162	10,266	6,650	700									29,778
Mud				350	4,900	2,100				6,650	10,850	8,750	33,600
Totals	12,162	10,266	6,650	7,350	12,250	2,100				6,650	12,250	8,750	78,428
DREDGE 'CANADA.'													
Mud												1,350	1,350
Sand—ordinary and sawdust	5,490	5,040	3,960	3,690	2,970	1,260					3,600	3,600	29,610
Sand			990									90	1,080
Mud and shells										1,260	2,790	1,260	5,310
Totals	5,490	5,040	4,950	3,690	2,970	1,260				1,260	6,390	6,300	37,350
DREDGE 'NEW DOMINION.'													
Sand and clay											3,825	3,500	7,325
Mud and sawdust	15,200	13,300	10,350	3,587½									42,437½
Clay		950			1,437½								2,387½
Mud, clay & sawdust				5,062½									5,062½
Mud, sand & sawdust			4,300								4,575		8,875
Sand											6,650	6,050	12,700
Mud and clay				2,312	487½							3,150	5,949½
Totals	15,200	14,250	14,650	10,962	1,925						15,050	12,700	84,737

CLASSIFICATION AND QUANTITIES of Material removed by Dredges in the Maritime Provinces, &c.—*Continued.*

DREDGE 'PRINCE EDWARD.'

Description of Material Dredged.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Total.
	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.
Sand and rock	810	1,596	.....	315	.....	.....	.....	.....	.....	.....	.....	.....	2,721
Clay	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,070	2,070
Sand and mud	2,160	1,305	1,845	270	.....	.....	.....	.....	.....	.....	.....	.....	5,580
Sand	5,895	1,967	270	.....	.....	.....	.....	.....	.....	.....	.....	.....	8,132
Mud	450	495	5,130	8,190	8,910	.....	.....	.....	.....	.....	10,080	4,185	37,440
Totals	9,315	5,363	7,245	8,775	8,910	.....	.....	.....	.....	.....	10,080	6,255	55,943

DREDGE 'GEO. McKENZIE.'

Hard-pan and rock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	405	405
Mud, stone and logs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,360	2,745	4,095
Logs, stone and old hull	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	720	720
Mud	.....	.....	.....	.....	270	1,170	.....	.....	.....	.....	135	315	1,890
Totals	.....	.....	.....	.....	270	1,170	.....	.....	.....	.....	1,485	4,185	7,110

DREDGE 'CAPE BRETON.'

Sand	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,050	1,050
Mud and oystershells	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15,960	15,960
Mud, oyster shells and logs	.....	.....	.....	.....	4,200	.....	.....	.....	.....	.....	15,330	.....	19,530
Clay and rock	.....	.....	3,360	2,415	.....	.....	.....	.....	.....	.....	.....	.....	5,775
Clay and stone	.....	.....	4,040	.....	.....	.....	.....	.....	.....	.....	.....	.....	4,040
Logs, sand and mud	2,310	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,310
Sand and mud	9,450	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,570	13,020
Mud and rock	.....	5,985	9,135	10,185	.....	.....	.....	.....	.....	.....	.....	.....	25,305
Totals	11,760	5,985	16,535	12,600	4,200	.....	.....	.....	.....	.....	15,330	20,580	86,990

Totals	7,455	5,650	5,495	7,520	630						5,380	5,110	37,240

HAND DREDGING.

Sand, ordinary			800											800
Mud, sand and gravel		845												845
Totals		845	800											1,645

DETAILS OF DREDGING IN THE MARITIME PROVINCES.

For the Fiscal Year ended June 30, 1903.

Dredge.	Locality.	Date.	Time Dredging. Hrs.	Min.	Quantity. Cubic Yards.	Expenditure at Locality. $ cts.	Per Cubic yard for Local Expenditure. $ cts.	Wintering, Repairs, Equipment and Superintendence, *pro rata*. $ cts.	Total Cost. $ cts.	Per Cubic Yard for Total Expenditure. $ cts.
St. Lawrence	Bar.. Sonora, St. Mary's River, Guysboro' Co., N.S.	July 1 to Oct 13, 1902 alternately	89	45	5,628	1,245 55	0 22·13	958 78	2,204 33	0 39·16
	St. Mary's Pier, Guysboro' Co., N.S..	July 1 to Oct. 13, 1902	174	55	25,200	2,336 75	0 09·27	1,798 76	4,135 51	0 16·41
	Intercolonial Coal Mining Co., Pictou, N.S	Oct. 14 to Dec. 9, 1902, and April 16 to June 1, 1903	216	55	39,200	3,294 52	0 08·40	2,536 02	5,830 54	0 14·87
	Intercolonial Ry. Pier, Pictou, N.S	June 5 to 20, 1903	41	50	8,400	379 17	0 04·51	291 87	671 04	0 07·99
Canada	Liverpool, Queen's Co., N.S.	July 1 to Dec. 13, 1902, and April 25 to June 30, 1903	561	20	37,350	7,369 21	0 19·73	4,856 34	12.225 55	0 32·73
New Dominion	Grand Lake Flats, Queen's Co., N.B.	July 1 to Nov. 8, 1902, and June 23 to 30, 1903	919	00	60,137	5,040 51	0 08·38	1,914 85	6,955 36	0 11·56
	Between Chipman and Brigg's Corner, Salmon River, Queen's Co., N.B	April 30 to June 22, 1903	338	00	24,600	2,326 09	0 09·45	883 63	3,209 72	0 13·04
Prince Edward	Murray River, King's Co., P.E.I.	July 1 to 18, and Aug. 17 to 22, 1902	150	45	6,952	1,178 84	0 16·95	644 27	1,823 11	0 26·22
	Murray River Railway Co., P.E.I.	July 19 to Aug. 16, 1902	205	20	5,926	1,202 89	0 20·29	657 41	1,860 30	0 31·39
	Murray Harbour South P.E.I.	August 23 to 29, 1902	53	00	1,800	328 67	0 18·26	179 63	508 30	0 28·23
	Montague Bridge, P.E.I.	Aug. 30 to Dec. 10, 1902, and April 30 to June 17 1903	873	25	39,195	6,753 43	0 17·23	3,690 95	10,444 38	0 26·64
	Halliday's Wharf, Queen's Co., P.E.I.	June 18 to 30, 1903	45	00	2,070	985 59	0 47·61	538 65	1,524 24	0 73·63
Geo. McKenzie	I. C. Ry. Wharf, Pictou Co., N.S.	Nov. 22 to Dec. 9, 1902	27	00	1,440	1,064 12	0 73·89	1,121 37	2,185 49	1 51·77
	N. S. Steel & Coal Co., North Sydney, C.B.	May 13 to June 22, 1903	195	00	5,040	2,202 93	0 43·70	2,321 46	4,524 39	0 89·76
	Salter's Wharf, North Sydney, C.B	June 23 to 25, 1903	20	00	630	153 38	0 24·34	161 63	315 01	0 50.00

New Brunswick.	Russell Bar., York Co., N.B	July 1 to 18, 1902, and Aug. 25 to Nov. 7, and April 30 to June 30, 1903...............	925	13	28,885	4,790 59	0	16·59	3,042 04	7,832 63	0	27·11
	Chapel Bar., York Co., N.B..........	July 1 to Aug. 24, 1902........	280	00	8,355	1,351 65	0	16·17	858 31	2,209 96	0	16·45
			5643	58	387,798	53,797 62	0	13·89	31,415 04	85,212 66	0	21·97

PROVINCE OF QUEBEC.

River St. Lawrence Ship Channel,
Ottawa, January 12, 1904.

Sir,—According to your instructions I beg to present the following annual report on the operations for the improvement of the River St. Lawrence Ship Channel, during the fiscal year ended June 30, 1903:—

Physical Features.
Present Navigation.
General Information.
History of the Ship Channel.
Present Project.
Cost of the Ship Channel to date.
Progress of Operations to date.
Division I. Completed.
Estimate, 30 Foot Channel.
Dredges.
General Notes on Dredging Operations.
Sorel Ship Yard.
Description of Dredging Plant.
Table I. Abstract of Operations.
Table II. Classification of Disbursements.

I have the honour to be, sir,
Yours obediently,
F. W. COWIE,
Engineer in charge.

Eugène D. Lafleur, Esq., C.E.,
Acting Chief Engineer,
Department of Public Works,
Ottawa, Ont.

RIVER ST. LAWRENCE SHIP CHANNEL.

Physical Features.

The distance between Montreal and Quebec by the River St Lawrence ship channel is 160 miles. Of this distance about 65 per cent is natural deep water not requiring any improvement.

From Montreal to Three Rivers, 82 miles, the tide is not appreciable.

From Three Rivers to Batiscan, 20 miles, the tide can always be felt, but owing to uncertainty of time and height, it cannot be depended upon for navigation.

From Batiscan to Portneuf, 22 miles, during 6 hours out of every 12, half-tide giving an additional depth of from 1½ to 4 feet, may be taken advantage of by passing during that 6 hours.

From Portneuf to Quebec, 36 miles, there is a tide of from 9 to 15 feet, giving tidal navigation for about 9 hours out of every 12.

The water in the river has a very great annual fluctuation. The average height above ordinary low water is for May, 6½ feet; June, 4½ feet; July, 3¾ feet; August, 1¾ feet; September, 1 foot; October, ⅓ foot; November, ⅛ foot.

tal fall in water level in the river at ordinary low water, between Montreal , is about 29 feet.

Montreal to Three Rivers, 11 feet; from Three Rivers to Batiscan, 3½ feet; can to Portneuf, 10½ feet; and from Portneuf to Quebec, 4 feet.

rrent varies throughout. It is strongest at St. Mary's Current in Montreal Cap à la Roche, and at the Richelieu rapids. It is quite gentle in Lake St.

neral average is about 2½ miles per hour.

iver St. Lawrence between Quebec and Montreal is usually free from ice 10, and closed to traffic about November 25, making the season of naviga- 7½ months.

Present Navigation.

esent navigable channel between Montreal and Quebec has a depth of 27½ nary low water, and a minimum width of 300 feet.

proved channel is being made 30 feet deep at the extreme low water level of west ever reached except for a few days in 1895.

w channel will give nearly 4 feet greater draught for navigation than the nel.

erage depth of water in the 27½ foot channel, with the greatest and least ach year from May to November, since 1890, is given in the following

Average depth for each month.							From Sorel gauge, during each year (May to Nov.).	
May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Highest.	Lowest.
ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.
35 6	35 3	31 9	30 6	30 9	29 9	30 6	37 0	29 0
34 6	31 3	29 9	29 9	30 0	28 3	28 3	36 9	27 3
31 0	31 9	31 6	30 6	28 9	28 3	28 3	33 6	27 3
36 0	34 3	30 9	29 9	29 6	28 6	28 0	37 6	27 6
34 6	31 9	31 0	29 2	28 3	28 9	29 0	36 0	27 7
33 3	31 3	28 3	28 3	27 6	26 9	26 9	34 6	25 10
33 6	30 6	28 9	28 0	27 6	27 9	29 0	37 0	27 4
35 6	32 6	30 3	29 3	28 0	27 0	27 6	37 0	26 5
31 6	30 9	29 8	28 6	28 2	28 3	28 6	32 1	26 9
36 2	31 9	30 3	28 6	27 6	28 0	27 9	37 9	26 9
33 6	30 9	30 6	29 6	28 1	28 9	29 2	35 9	27 4
34 3	31 10	29 2	28 3	27 7	27 4	27 3	36 3	26 6
33 2	32 2	32 2	29 4	28 1	28 1	29 0	34 1	27 6
32 0	30 11	30 5	29 5	28 4	29 0	27 11	32 8	26 11

the season of 1903, except for a few days at the end of the month of after all the large ships had sailed, the water in the River St. Lawrence rably higher than the average and vessels as a rule loaded to a greater n ever before.

General Information.

ole of the ship channel between Longue Pointe, the eastern limit of Mont- r and Quebec, where dredging has been done or where otherwise doubtful, ghly tested during the season of 1903. No boulders or obstructions of a character were found.

the supervision of the dredging, the testing, and other work, the usual pre- re taken and assistance given for the aid and safety of navigation.

In the River St. Lawrence ship channel proper there were during the season eigh accidents to ocean-going ships. None were of a serious character, further than th delay and cost of being re-floated, and none were in any way due to the ship channel.

Two serious accidents, apart from these happened in Montreal Harbour.

The following is a list of the accidents in the ship channel:—

'*Carrigan Head*,' Lake St. Peter; aground; buoys dragged out of position.

'*Dominion*,' Cap Levraut; scraped; unknown object, no damage.

'*Campana*,' Vercheres; aground; lights obscured by steamship at anchor.

'*Ibernian*,' Lake St. Peter; aground; mistook buoy in smoky weather.

'*Farmond*,' Contrecœur, aground; smoke, got off without trouble or damage.

'*Drottning Sophia*,' Lake St. Peter; aground; fog, hauled off by '*Eureka*' an dredge tug.

'*Hektos*,' Lake St. Peter; aground; went on bank after slight collision wit '*Drottning Sophia*.,

'*Mount Royal*,' St. Antoine; aground 1 hour; channel 1 mile wide.

During the season of 1903 the total number of ocean going vessels passing up an down was 802, an increase of 45 over last year. The total tonnage amounted to near 1,900,000 tons, about 350,000 tons greater than any previous year.

That means about an average of 10 ocean-going vessels per day passing in on direction or the other through the ship channel. An equal tonnage by railway woul make 80 loaded trains per day.

History of the Ship Channel.

Before the commencement of any dredging operations, the depth on the flats Lake St. Peter was about 11 feet at the ordinary autumn low water of that time.

The actual improvements were commenced in 1844, and continued by the gover ment as a public work until 1846, and abandoned the following year owing to oppositio to the location of the channel.

Legislation was passed in 1850 transferring the plant and authorizing the Montre Harbour Commissioners to borrow money and proceed with the works as they shou deem best.

From 1851 to 1888 all operations for the improvement of the St. Lawrence betwe Montreal and Quebec were carried on by the Montreal Harbour Commissioners, t interest on the cost of the work being defrayed by a tonnage tax on all vessels drawi 10 feet and upwards.

In 1888 the channel from Montreal to Cap à la Roche was completed to 27½ fe at ordinary low water, and from there to Quebec 27½ feet at half tide.

The government decided in 1888 to re-adopt the River St. Lawrence ship channel a public work.

Under the Public Works Department, from 1888 until 1898, the work begun by t Harbour Commissioners was continuel.

The difficult rock work at Cap à la Roche and Cap Charles was completed, as d signed.

Almost all of the dredged portions of the river, except the channel in Lake S Peter were cleaned up or deepened, and many curves and narrow places were widene

Surveys were made, and between Cap Charles and Quebec, to avoid the necessity waiting for the tide, channels were dredged through several shoals.

The extraordinary low water of 1895 and 1897, and the increase in the size vessels, urgently called for a wider and deeper channel.

In 1897 it was decided to construct new plant consisting of large and powerf dredges, tugs, barges, &c., suitable for channel improvement on a large scale.

Present Project.

ne dredging plant was in a position to warrant the commencement of a
plan of operations, and as two new dredges of a large type, with tugs
proved their efficiency, two powerful steel dredges designed according to
ce and experience in this identical work, with tugs, &c., were almost com-
more to complete the six required, were authorized.
roper dredging fleet assured, and the necessary shops and ship yard at
, the work of the 30 foot channel was undertaken.
water of 1897, the lowest on record except the short period of extra-
ater of 1895, was adopted as the plane or river level at which the channel
30 feet in depth.
o decided to make the channel as wide as could be dredged in one cut, viz,

nt object of the dredging operations is to obtain in the shortest possible
annel between Montreal and Quebec for safe 30 foot navigation. The
th for the tangents has been fixed at 450 feet, but the bends are widened
0 to even 750 feet. The dredging is being done to give a clear depth of
extreme low water of 1897.
gable depth in this channel as being dredged, during the season of 1903,
:—

	Feet.	Inches.
. . . . .	35	8
. . . . .	34	7
. . . . .	34	1
st.	33	1
mber.	32	0
ber.	32	8
mber.	31	7

test depth from May to November was 36 feet 4 inches, and the least, at
vember, 30 feet 7 inches.
distance between Montreal and Quebec is 160 miles. The length requir-
between Longue Point, the eastern limit of Montreal Harbour and Quebec
out 62¼ miles.

COST OF SHIP CHANNEL TO DATE.

TABLE showing the Total Cost of the Dredging and Plant and the Quantities Dredge up to June 30, 1903.

	Cost of Dredging.	Expenditure for plant, shops, surveys, &c.	Quantities dredged.
Montreal Harbour Commissioners—1851 to 1888.	$ cts.	$ cts.	Cubic yards.
Dredging Montreal to Cap à la Roche to 27½ feet at ordinary low water, and from Cap à la Roche to Quebec to 27½ feet at half tide	3,402,494 35	534,809 65	19,865,69
Department of Public Works.			
Dredging, consisting of widening and cleaning up of channel, deepening Cap à la Roche to Cap Charles to 27½ feet at ordinary low water and dredging at Grondines, Lotbinière and Ste. Croix—1889 to June 30, 1899	829,583 08	486,971 79	3,558,73
Present Project:—Dredging channel between Montreal and Quebec to 30 feet at lowest water of 1897; also widening to a minimum width of 450 feet and straightening—			
Fiscal year 1899-1900	100,191 01	265,270 78	1,107,89
" 1900-01	136,680 83	287,040 04	2,479,38
" 1901-02	185,429 80	479,731 47	3,098,35
" 1902-03	255,776 55	277,703 50	6,544,60
	4,910,155 62	2,331,527 23	36,654,66

PROGRESS of the Dredging Operations at the date of writing, the close of the season of 1903.

Locality.	Total Length Requiring Dredging.	Length Dredged in 1903.	Total Length of 30 Feet Channel Dredged.	Length yet to be Dredged.
	Miles.	Miles.	Miles.	Miles.
Division 1:— Montreal Harbour to Sorel	21·80	4·20	21·80	Some cleaning up and banks to be straighted.
Division 2:— Sorel to Batiscan	12·45	1·20	4·90	7·55
Division 3:— Lake St. Peter	18·00	3·50	*7·20 †2·30	8·50
Division 4:— Batiscan to Quebec	10·00		0·90	9·10
	62·25	8·90	37·10	25·15

*Not widened. †Widened.

APER No. 19

tiscan to Quebec the tide is available, and by taking advantage of it, ves-
r draught may pass.
ne summer of 1903 the practical completion of Division 1 was announced.
channel between Sorel anchorage and Longue Pointe, the eastern limit
harbour, of a depth of 30 feet at the extreme low water level reached in
ing a minimum width of 450 feet.
miles of navigation between these two points there are now but 16 tan-
by easy curves where the channel is widened to from 500 to 750 feet.

Division 1 Opened for Navigation.

onth of October, 1903, the dredging in Division 1 having been practically
d the work thoroughly tested, it remained for the Department of Marine
to give the necessary aids to navigation so as to make the improved high-
ilable.
pation, this department had early in the season reported on the position
of the lighthouses that would be required to permanently mark the chan-
ed.
artment of Marine and Fisheries promptly erected the necessary light-
ade further preparations so as to be ready to mark the channel as soon as

nber 1 the lighthouses were put in operation, and gas buoys were placed
ends and narrow places.
fit to navigation was immediately apparent. In the month of November,
s of great value, several large ships, instead of anchoring at Sorel, took
the improved and well-marked channel, and proceeded to Montreal, safely
docks before midnight.
expected that the large transatlantic ships outward bound will sail from
ng the night. The time for sailing for these large vessels is usually fixed
Coal ships, however, and other vessels of light draught, will be able to sail
l in clear weather at any time when they are ready. Inward bound ships
avail themselves of the improvements throughout the channel as soon as

y of the work done on the River St. Lawrence is evident. Advantage of
ment is immediately taken, and at the present time several very large
g built with a view to the expected increased accommodation.

ESTIMATE, 30 Foot Channel, December, 1903.—Montreal Harbour to Quebec.

Locality.	Length of Dredging.		Cubic Yards yet required to be done
	Required.	Done.	
	Miles.	Miles.	
Division 1:—			
Longue Pte. to Pte. aux Trembles (en haut)		5·05	Some cleaning up and banks to be straightened.
Ile Ste. Thérèse		0·40	
Varennes to Cap St. Michel		3·00	
Cap St. Michel to Vercheres		4·50	
Verchères Traverse		1·10	
Verchères to Contrecœur		1·70	
Contrecœur channel		6·05	
Total		21·80	
Division 2:—			
Sorel to Ile de Grace	1·20	3·20	500,000
Stone Island		1·10	
Ile au Raisin	0·25		40,000
Lake St. Peter (see 3)			
Port St. Francis	0·40	0·10	350,000
Three Rivers		0·50	
Cap Madeleine to Becancour	1·55		620,000
Becancour to Champlain	2·25		2,000,000
Champlain to Pte. Citrouille	1·30		290,000
Batture Perron	0·60		450,000
Total	7·55	4·90	4,250,000
Division 3:—			
Lake St. Peter	8·05	*7·20 †2·30	13,900,000
Total	8·05	9 50	13,900,000
Division 4:—			
Batiscan to Cap Levraut	3·00		1,300,000
Cap à la Roche channel	2·00		1,200,000
Pouillier Rayer	1·20		500,000
Cap Charles	0·90		500,000
Grondines	0·80		200,000
Lotbinière		0·40	
Cap Santé		0·20	
Ste. Croix	0·60	0·30	150,000
St. Augustin	0·60		150,000
Total	9·10	0·90	4.000,000
Totals	25·15	37·10	22,150,000

*Not widened. †Widened.

DREDGES.

Lady Aberdeen.—The buckets of this dredge were designed for soft material. She worked for the whole fiscal year at Contrecœur, in soft to stiff blue clay with small stones.

A total of 192 days were made. During this time the dredge was in actual operation 74 per cent of the full working time.

The total number of cubic yards removed amounted to 982,750, at a cost of $32,287.23, or an average of 3·28 cents.

Lady Minto.—Dredge 'Lady Minto' also worked during the whole of the fiscal year at different places on the Contrecœur channel.

The working time of the year was 190 days, and the dredge was in operation 7 per cent of the full time.

APER No 19

ng the kind of material and the state of her machinery, this dredge made
ory progress.
tity removed amounted to 643,600 cubic yards, and at the total cost of
cost per yard was 4·76 cents.
-The 'Laurier' was also designed for soft digging. The material at
embles, where this dredge worked during the whole fiscal year, was very
ky. The results, as regards quantities removed, were unsatisfactory; but
ough difficult and hard on the dredge, had to be done.
g repairs delayed the commencement of the operations of this dredge in
nd the number of days during which this dredge worked was only 172.
ntage of time of actual work 60 per cent.
number of cubic yards dredged during the year was 365,630, and the cost
8·71 cents per yard.
t the commencement of the fiscal year this dredge was at Sorel for repairs
boilers.
ys she then worked at Champlain, removing the sand bars, which require
ually. This is the only place where filling in of any consequence occurs
annel.
20 the dredge was taken to her usual work at Pointe aux Trembles *(en*
she continued until the close of the season, November 27.
the 'Laval' having heavy repairs to be made, was not ready for work
She was again placed at Pointe aux Trembles, and worked there until
she was taken to Champlain and Pointe Citrouille, where the work was
ted at the close of the fiscal year.
55, the total number of days working, this dredge was in actual operation
the full working time.
quantity dredged amounted to 273,425 cubic yards, and the total cost
13·65 cents per yard.
e.—This vessel is probably the best dredger of her type in the world for
or stiff material, in fair shelter, and a current not greater than 6 miles
a depth not exceeding 45 feet. It is probable that for clean work, general
onomy, the record of this dredge cannot be beaten by any other machine.
e fiscal year 1902-3, under Captain Albert Marcotte and Engineer Johnny
edge made three new records for an elevator dredge.
test number of working days for one year, viz., 196, were made, and
eason of the long season, bad weather, repairs, &c., the dredge was only in
on 60 per cent of the full working time, the results were very satisfac-
e greatest quantity ever excavated by an elevator dredge in one year, viz.,
c yards. The whole of the work was on the Contrecœur channel, where
as compact blue clay.
l cost for the year of $33,503.71, the cost per yard for the work of this
8 cents, also a record.
—Dredge 'Baldwin' is the newest vessel of the elevator fleet. She worked
e fiscal year at Pointe aux Trembles *(en haut)*.
ge also made a long year, viz., 191 days, and during that time was in
on 76 per cent of the full working time.
rial was not actually hard, but it was tough and excessively hard on the
Nothing but a new dredge and extremely strong buckets would have stood
nd heavy duty this vessel was given.
ng the material, excellent progress was made. At a total cost for the
2.81, the 'Baldwin' removed 783,500 cubic yards, costing only 4·12 cents

Tarte.—The hydraulic dredge 'J. Israel Tarte' is the newest machine of
Lawrence ship channel dredging fleet. This dredge commenced work in
d the work for the fiscal year 1902-3 is practically her first work.

The work in hand consists in deepening the present channel in Lake St. Peter about 4 feet, *i.e.*, from 27½ feet at ordinary low water level to 30 feet at the extreme low water of 1897.

At the curves, where the lightships could not be removed far from their positions, the channel was also widened at the same time.

It was then found that, except in the very long tangents, it was economy to complete the work of deepening and widening at the same time.

Mr. L. A. Desy, mechanical engineer, had charge of the working of this dredge, having under him Captain J. L. Michaud and Engineer Jean Bilodeau.

There is no question but that this type of dredge is very successful for such work as is required in Lake St. Peter, if it can be kept in steady operation.

During the first season a great deal of time was lost owing to trouble with the discharge pipe. This was overcome by the placing during the winter of strong tension ball-and-socket connections between the pontoons, and by a swivel connection with the dredge.

During the winter the whole of the machinery of the dredge received a general overhauling, and many changes were made, effecting greater strength. Steam drums were placed on the four boilers, and more powerful winches were added.

Although, owing to these extensive alterations, the dredge was not ready to work in 1903 until the beginning of June, the improvements made a marked change in the results of the operations. There was no further trouble with the discharge pipe, and very little time was lost, even during moderate gales.

To obtain good results the dredge was, however, forced to the limit of her capacity, and there were still frequent breakdowns.

As all repairs, and everything except re-construction, are charged to the season's work, the cost per yard depends largely on the length of the season. During the fiscal year this dredge worked only 127 days. If the dredge could have been kept in operation for 150 days, as expected, the total quantity excavated would have been greater and the cost per yard even better.

The actual operations for the fiscal year resulted in the removal of 2,333,200 cubic yards, at a cost of $57,846.51, making 2·48 cents per yard. The average quantity dredged per day amounted to 18,372 cubic yards.

During the month of September, 1903, dredge 'J. Israel Tarte' easily made the world's record for one month's dredging. In 25 working days the dredge was in actual operation 83 per cent of the full working time of 132 hours per week, and removed 750,100 cubic yards scow measurement. These results were calculated from actual measured cross-sections, and by adding to the quantity in situ 25 per cent, to make scow measurement. This made over 30,000 cubic yards per working day, or 1,650 yards per hour of actual work.

The dredge 'J. Israel Tarte' was disabled on November 3, 1903, by a disastrous accident to one of her boilers.

General Notes.

The plant available consisted of six elevator dredges, one hydraulic dredge, six tugs, and two staff and sweeping steamers. There was also a stone-lifter, three coal barges, and the necessary hopper scows, boarding scows, winch scows, and the testing scow.

The constant heavy work day and night is very hard on the machinery, and all the dredges were stopped from time to time, for shafts worn out, tumblers broken, and especially for buckets broken.

The hopper scows also caused more delay and trouble than usual, owing to wear and tear, the heavy material and heavy work.

The elevator dredges ordinarily work from 12 a.m. Monday until 6 p.m. Saturday, 20 hours per day, or 115 hours per week.

PAPER No 19

crews work in 10 hour shifts, changing at noon and midnight. Day and not as economical as day work only, especially in dredging, as coaling top the work.

g up the cost of the work of dredging everything is included, except interital expenditure and depreciation. The principal items of cost are, wages, tores, repairs, superintendence and engineering expenses. The item of es keeping the plant in constant good repair. The cost of operating an elewith its attendant plant amounts to about $32,000 per annum. The cost the hydraulic dredge will amount to about $60,000 per annum.

cost of the dredging operations on the ship channel for the fiscal year 55, and the total number of cubic yards dredged 6,544,605, making the cost ents. *This easily beats all previous records, both as to quantity dredged er cubic yard.*

wing tables show in a concise form the details of the operations of the ges, the classification of the expenditure, the cost per yard in each locality, diture at Sorel in connection with new plant and the ship yard generally.

SOREL SHIP YARD.

f items of construction and repair work at the Sorel shipyard during the reported by Mr. G. J. Desbarats, Director of Shipyard, were as follows :—

New Construction.

V. S. Fielding.—This is a steel, twin screw, sea-going, combined elevator hopper dredge.

is 250 feet by 42 feet by 18 feet.

was laid in the spring of 1902, and the work of construction proceeded e fiscal year.

deck houses, frames, winches, hoppers, &c., are being constructed at the d from designs by A. W Robinson, M.E., of Montreal.

nd of the fiscal year all the frames were in place, the outside plating and the well, and of the hoppers were in place and rivetted and caulked. The main deck was in place and half of it rivetted. The foundations of the finished and the boilers were placed and fastened to their foundations. ates were nearly completed. The two main propelling engines were deliv- The bow and stern winches were under way and a quantity of patterns had been made for different portions of the dredge and were partly

ne engines, the boilers and the pumping engine were being constructed by

Progress.—This is a spoon dredge with a 4½ cubic yard dipper for excavath of 24 feet. The hull is of composite type, steel frames sheathed with

is 90 feet 10 inches by 34 feet 2 inches by 10 feet 1 inch.

commenced in July, 1902, was launched in November. The dredge was eted and ready for work at the end of the fiscal year. There remained d tanks to be fitted aboard to make the dredge available for work in salt

es Howden.—The twin screw tug with a hull of oak and pitch pine was d dredges. In the spring of 1903, when this tug was about completed, it essary to fit her up for the work of sweeping the channel, and on May 14, put into commission.

2

This tug with engines and boiler complete was constructed in Sorel at the goverr ment shipyard.

The hull is 100 feet by 21 feet by 10 feet.

Tug No. 9.—A light draught powerful tug is required for work in shallow place The engines of the old tug *John Pratt* were taken in hand to be fitted up for the ne vessel. A new hull was built and nearly completed by the end of the fiscal year. Th boiler was well begun, and the tug was expected to be ready for work by the end of th season of 1903.

Coal Barge No. 4.—Another short coal barge for coaling dredges without stoppin the work was commenced during the fiscal year 1902-03. The framing was complete and erected by the end of June.

D.G.S. Bayfield.—This steamer, formerly the *Lord Stanley,* was purchased by th Department of Marine and Fisheries, and rebuilt and fitted up for a surveying ship Sorel.

During the winter 1902-03 a new spar deck was built covering the whole vesse The steel framing and plating of the bow were extended to meet the spar deck. O the main deck new houses were built fore and aft, and on the spar deck a handson wheel house and chart room were erected. Sleeping apartments for the engineerin staff were built in the after hold, and for the crew in the forward hold and the for castle. An electric light plant was installed. The ship was thoroughly overhaule throughout, painted, and put in first class condition.

Dredge J. Israel Tarte.—The experience of the first season's operations of th dredge resulted in a number of changes being made to her construction and improv ment. During the winter of 1902-03 important alterations were made to the suctic pipe and the discharge pipe. The exit from the dredge was changed and a swivel elbo joint was attached on the outside to allow the pipe line to swing freely. Steam drun were placed on all the boilers. New bow and stern winches were provided and a gener overhauling was given to the dredge throughout.

Extensive alterations and improvements were made to the pipe line and the pontoc connections, and the method of attaching the pipe line to the winch scow was change

Hopper Scows.—For the use of the ship channel dredging fleet a large hopper sco commenced during the last fiscal year, was finished in July, 1902 This scow, 99 fe by 26 feet by 9 feet, capable of holding 300 cubic yards was provided with hydraul cylinders for operating the gates.

Another similar scow was commenced during the fiscal year.

Two hopper scows 60 feet by 17 feet by 9 feet, with a capacity of 90 cubic yar each, for the Ontario and Quebec dredging fleet, were completed.

Dredges *St. Louis, Nithsdale and Canal No. 1,* belonging to the Ontario and Qu bec dredging fleet, were kept in repair, and repairs were made and new parts provid for Dredge No. 6 at Quebec, and for the St. Maurice fleet.

The winter repairs and outfitting of 60 vessels was all carefully completed.

During the trials of the Lacoste ship brake attachment, the Steamer *Eureka* sar accidentally on June 25, opposite the shipyard at Sorel, and was floated on July 1.

Shipyard.—During the fiscal year the shipyard was enlarged by the addition of block of land transferred from the Department of the Interior.

Several old buildings were demolished and storehouses for wintering the equi ment of the fleet, were constructed. A large shed was built and a plumber sh equipped with the necessary appliances.

The shop and yard narrow gauge railway was completed, and the ligthing equi ment improved, general repairs were made where required, and the buildings, whar and equipment kept in good order.

DREDGING PLANT.

llowing is a description of the dredging plant owned and operated by the rks Department in connection with the River St. Lawrence ship channel uebec and Montreal.

DREDGES.

The Elevator Dredge 'Laval' (wooden hull).

ength over all—150 feet.
readth of beam—30 feet.
epth of hold—14 feet.
verage draught—11 feet.
reatest working depth—43·5 feet.
ull built in Ottawa in 1894.
orking capacity per day in hard material—1,000 to 2,000 cubic yards

The Elevator Dredge 'Laurier' (wooden hull).

ength over all—168 feet.
readth of beam—32 feet.
epth of hold—14 feet.
verage draught—11 feet.
reatest working depth—42·5 feet.
uilt at Sorel shipyard in 1897.
orking capacity per day in fairly stiff clay—2,000 to 3,000 cubic yards.

The Elevator Dredge 'Lady Aberdeen' (steel hull).

ength over all—148 feet.
readth of beam—32 feet.
epth of hold—13 feet.
verage draught—7·5 feet.
reatest working depth—42·5 feet.
uilt at Sorel shipyard in 1900.
orking capacity per day in soft material—4,000 to 5,000 cubic yards.

The Elevator Dredge 'Lady Minto' (steel hull).

ength over all—148 feet.
readth of beam—32 feet.
epth of hold—13 feet.
verage draught—7·5 feet.
reatest working depth—42·5 feet.
uilt at Sorel shipyard in 1900.
orking capacity per day in stiff clay and stones—2,000 to 4,000 cubic yards.

The Elevator Dredge 'Lafontaine' (wooden hull).

ength over all—168 feet.
readth of beam—32 feet.
epth of hold—14 feet.

Average draught—9 feet.
Greatest working depth—45 feet.
Built at Sorel shipyard in 1901.
Worfking capacity per day in soft material—5,000 to 6,000 cubic yards.

The Elevator Dredge 'Baldwin' (wooden hull).

Length over all—165 feet.
Breadth of beam—34 feet.
Depth of hold—14 feet.
Average draught—8 feet.
Greatest working depth—45 feet.
Built at Sorel shipyard in 1902.
Working capacity per day in medium material—2,500 to 3,500 cubic yards.

The Hydraulic Dredge 'J. Israel Tarte' (steel hull).

Length over all—160 feet.
Breadth of beam—42 feet.
Depth of hold—12·5 feet.
Average draught—6 feet.
Length of suction frame—80 feet.
Greatest working depth—50 feet.
Built at the Polson Iron Works, Toronto, in 1902.
Working capacity per day in soft material—20,000 cubic yards.

TUGS.

The Tug 'Frontenac' (composite hull).

Length over all—113 feet.
Breadth of beam—23 feet.
Depth of hold—10 feet.
Average draught—9 feet.
Built at Sorel shipyard in 1901.

The Tug 'Eureka' (steel hull).

Length over all—100 feet.
Breadth of beam—22 feet.
Depth of hold—12 feet.
Average draught—11 feet.
Built in Glasgow, Scotland, in 1893.

The Tug 'De Lévis' (wooden hull).

Length over all—104 feet.
Breadth of beam—20 feet.
Depth of hold—10 feet.
Average draught—9 feet.
Built at Sorel shipyard in 1902.

The Tug 'James Howden' (wooden hull).

Length over all—100 feet.
Breadth of beam—21 feet.
Depth of hold—10 feet.
Average draught—7·5 feet.
Built at Sorel shipyard in 1903.

PAPER No. 19

The Tug 'St. Jean-Iberville' (steel hull).

ngth over all—90 feet.
eadth of beam—18 feet.
epth of hold—12 feet.
verage draught—10 feet.
uilt at Sorel shipyard in 1897.

The Tug 'Lac St. Pierre' (wooden hull).

ngth over all—100 feet.
eadth of beam—21 feet.
epth of hold—10 feet.
verage draught—7'6 feet.
uilt at Sorel shipyard in 1901.

The Tug 'St. Francis' (wooden hull).

ngth over all—80 feet.
eadth of beam—17 feet.
epth of hold—7'8 feet.
verage draught—9 feet.
uilt in 1875.

The Tug 'Cartier' (wooden hull).

ngth over all—84 feet.
readth of beam—18 feet.
epth of hold—8'5 feet.
verage draught—8 feet.
uilt at Sorel shipyard in 1893..

The Tug 'Emilia' (wooden hull).

ength over all—84 feet.
Breadth of beam—17 feet.
Depth of hold—9 feet.
Average draught—7'5 feet.
Built at Sorel shipyard in 1898.

The Tug 'Champlain' (wooden hull).

Length over all—84 feet.
Breadth of beam—17 feet.
Depth of hold—9 feet.
Average draught—7'5 feet.
Built at Sorel shipyard in 1901.

The Tug 'Jessie Hume' (wooden hull).

Length over all—72 feet.
Breadth of beam—17'3 feet.
Depth of hold—8 feet.
Average draught—8'5 feet.
Built in Buffalo in 1878.

COAL BARGES.

The coal barge 'No. 1' (wooden hull).

Length over all—120 feet.
Breadth of beam—24 feet.
Depth of hold—10 feet.
Built at Sorel shipyard in 1898.

The coal barge 'No. 2' (wooden hull).

Length over all—125 feet.
Breadth of beam—25 feet.
Depth of hold—11 feet.
Built at Sorel shipyard in 1900.

The coal barge 'No. 3' (wooden hull).

Length over all—98 feet.
Breadth of beam—28 feet.
Depth of hold—12 feet.
Built at Sorel shipyard in 1902.

Stone Lifter 'No. 2' (wooden hull).

Length over all—80 feet.
Breadth of beam—25 feet.
Depth of hold—9'8 feet.
Rebuilt at Sorel shipyard in 1897.

Sounding Scow (wooden hull).

Length over all—60 feet.
Breadth of beam—25 feet.
Depth of hold—6 feet.
Built at Sorel shipyard in 1898.

Coal Scow 'No. 2' (wooden hull).

Length over all—54 feet.
Breadth of beam—18 feet.
Depth of hold—4 feet.
Built at Sorel shipyard in 1892.

Six Lodging Scows (wooden hulls).

Rebuilt from old dump scows and fitted out as lodging scows for crews of dredges and tugs of ship channel fleet, at Sorel shipyard in 1899, 1901 and 1902.

House boat 'Lotbinière (wooden hull).

Length over all—70 feet.
Breadth of beam—18 feet.
Rebuilt from old dump scow, and fitted out for staff of Hydrographic Survey at Sorel shipyard in 1902.

APER No. 19

Winch Scow 'N. 3' (wooden hull).

th over all—60 feet.
dth of beam—18 feet.
h of hold—6 feet.
t at Sorel shipyard in 1902.

(wooden hull) for dredge 'J. Israel Tarte' (with steam boiler and steam winch).

th over all—75 feet.
dth of beam—25 feet.
h of hold—5·5 feet.
t at Sorel shipyard in 1902.

Discharge Pipe and Pontoons of Dredge 'J. Israel Tarte.'

engths of pipe—36 inches diameter by 100 feet long.
ength of pipe—36 inches diameter by 35 feet long.
airs of pontoons for floating pipes—42 inches diameter by 90 feet long.

HOPPER SCOWS.

pper Scows (wooden hulls—with hydraulic power for closing gates).

th over all—97 feet.
dth of beam—24·5 feet.
h of hold—9 feet.
city—200 cubic yards.
t at Sorel shipyard in 1897.

pper Scows (wooden hulls—with hydraulic power for closing gates).

th over all—90 feet.
dth of beam—18 feet.
h of hold—7 feet.
city—150 cubic yards.
t at Sorel shipyard in 1898.

pper Scows (wooden hulls—with hydraulic power for closing gates).

th over all—97 feet.
dth of beam—24 feet.
h of hold—9 feet.
city—200 cubic yards.
t at Sorel shipyard in 1899 and 1901.

pper Scows (wooden hulls—with hydraulic power for closing gates).

th over all—98 feet.
dth of beam—24 feet.
h of hold—9·5 feet.
city—300 cubic yards.
t at Sorel shipyard—2 in 1901, 3 in 1902.

PUBLIC WORKS OF CANADA.

River St. Lawrence Ship Channel.

Abstract of work of Dredging Fleet during the fiscal year ended June 30, 1903.

Dredge.	Locality of Dredging.	Time of Service.	Nominal Working Time 20 hrs. per Day.	Hours Actual Dredging.	Number of Scows filled.	Number of Cubic yards Dredged. Scow Measurement.	Depth of Dredging at low water of 1897.	Width.	Character of Soil.	Remarks.
		Days.	Hours.				Ft. In.	Feet.		
'Lady Aberdeen'	Contrecœur—									
	Contrecœur Bend..	28	540	391½	932	186,400	30 0	450-550	Blue clay..... . .	Capt. N. Dauphinais.
	St. Ours Traverse.....	125	2,405	1,781½	.....	627,550	30 0	450	Clay and stones.....	
	Petit Traverse....	39	745	563¼	844	168,800	30 0	450	Stiff blue clay.	
		192	3,690	2,736¼	....	982,750				
'Lady Minto'	Contrecœur—									
	Petit Traverse.....	56	1,070	784½	972½	194,500	30 0	450	Stiff blue clay.....	Capt. R. Matte.
	Contrecœur Traverse.....	134	2,575	1,831¼	2,245¼	449,100	30 0	450	Blue clay and stones	
		190	3,645	2,615½	3,217¾	643,600				
'Laurier' ..	Pointe aux Trembles (en haut)	172	3,305	1,989½	1,778	365,630	30 0	450	Clay and stones.....	Capt. C. Gendron.
'Laval'. ..	Pointe aux Trembles	134	2,572	1,777¼	1,542⅔	247,175	30 0	450	Clay and stones.....	Capt. B. Ladebauche.
	Pointe Citrouille	20	380	254	153	22,950	27 6	300	Sand.....	
	Champlain..... ...	1	20	18¾	22	3,300	27 6	300	"	
		155	2,972	2,050	1,717⅓	273,425				
'Lafontaine	Contrecœur—									
	Contrecœur Course.....	96	1,845	1,140	1,663	498,900	30 0	450	Blue clay.....	Capt. A. Marcotte.
	Contrecœur Bend..	24	450	321½	675	202,500	30 0	450	"	
	Upper ½ Bellmouth Curve....	44	845	483¾	906	271,800	30 0	450	"	
	Petit Traverse.....	32	640	447½	631	189,300	30	450	"	
		196	3,780	2,392½	3,875	1,162,500				

PAPER No. 19

2,333,200	6,044,605

DREDGING SHIP CHANNEL, River St. Lawrence between Montreal and Quebec, Classification of Disbursements for Fiscal Year ended June 30, 1903.

Vessels.	Fuel.	Wages.	Board.	Stores and materials.	Repairs. Labour.	General expenditure new plant rebuilding ship yard, &c.	Proportion of general and office expenses, &c.	Expenditure for each vessel.	Stone lifter Service. Elevator Dredges	Tug service.	Inspection towing, sweeping, &c.	Hydrographic survey including Str. De Levis.	Total cost of operations of each dredge and plant, during fiscal year.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Dredge Lady Aberdeen	4,262 00	6,049 01	2,305 41	1,247 63	5,196 46		1,572 16	20,832 67	197 30	8,504 85	2,752 41		32,287 23
Tug Cartier	1,785 00	3,606 85	1,414 40	422 74	635 03		641 83	8,504 85					
Dredge Lady Minto	4,135 25	5,952 49	2,306 25	1,178 00	3,577 90		1,403 14	18,593 03	197 30	9,109 74	2,752 41		30,652 48
Tug St. Jean Iberville	2,108 00	3,619 46	1,442 38	3,392 82	859 61		687 47	9,109 74					
Dredge Laurier	4,420 75	5,945 04	2,121 48	1,288 58	5,784 30		1,596 63	21,156 78	197 30	7,754 70	2,752 41		31,861 19
Tug St. Francis	1,644 75	3,109 04	1,172 03	307 84	935 82		585 22	7,754 70					
Dredge Laval	4,292 50	5,499 02	1,995 10	1,319 50	13,435 28		2,166 09	28,707 49	197 30	5,685 42	2,752 41		37,342 62
Tug John Pratt	1,483 25	2,314 31	990 48	262 78	205 54		429 06	5,685 42					
Dredge Lafontaine	5,495 25	6,214 13	2,455 69	1,675 07	4,850 23		1,688 88	22,379 25	197 31	8,174 74	2,752 41		33,503 71
Tug Emilia	1,888 55	3,341 12	1,273 92	532 65	521 63		616 92	8,174 74					
Dredge Baldwin	5,172 25	5,906 13	2,393 02	875 50	5,537 20		1,623 06	21,507 16	197 31	7,825 93	2,752 41		32,282 81
Tug Champlain	1,538 50	3,225 75	1,237 11	554 10	679 88		590 59	7,825 93					
Dredge J. Israel Tarte	13,591 50	8,329 39	2,691 95	1,464 31	8,662 17		2,835 63	37,574 95		14,766 73	5,504 83		57,846 51
Tug Lac St. Pierre	2,052 75	3,314 64	1,345 64	524 67	1,016 12		673 73	8,927 55					
Tug Jessie Hume	1,469 96	1,928 61	648 99	377 34	1,061 75		452 53	5,839 18					
Str. Frontenac (Div. ½ to each)	2,276 61	4,120 22	1,544 15	1,408 67	1,568 06		887 38	11,805 09					
Str. Eureka (elev.dr'g. add)	930 75	2,741 59	1,659 72	980 16	1,268 55		618 79	8,199 56					
Str. Jas. Howden (⅔ to hyd.dr'ge)	484 50	794 85	6 00	538 47	38 78		152 04	2,014 64					
Stone lifter No. 2 Divided equally elevator dredge	85 00	522 46	110 00	196 44	180 23		89 69	1,183 82					
Spoon Dredge No. 6								4,029 30					
Str. Lord Stanley								18,366 51					
Str. De Levis								6,907 23				6,907 23	
Ship Yard Construction and General Government Work													
Dredging at Wharf						3,880 00							
New Buildings						5,496 89							
Tools and Machinery						16,871 16							
Tug No. 6 Lac St. Pierre						632 50							

Stone lifter No. 3						1,510 12							
New Scows (2) 300 c. y						6,755 58							
New Winch Scow, J. I. T.						1,815 00							
Dredge J. Israël Tarte						70,113 94							
" W. S. Fielding						172,332 96							
W. S. F. Tools, &c						8,789 84							
Progress						50,183 06							
Ontario and Quebec, misc						998 14							
Ontario and Quebec 2 Scows						6,032 67							
Str. Lord Stanley						15,950 77							
Fuel in stock						29,750 00							
Timber on hand						24,669 87							
Unclassified Cashings, &c						15,500 00							
Hydrographic Survey						33,772 93						33,772 93	
Totals	59,117 12	76,533 01	29,113 72	15,547 27	56,014 54	506,717 20	19,310 84	285,079 59	1,183 82	47,005 38	16,514 46	40,680 16	255,776 55

DREDGING SHIP CHANNEL, River St. Lawrence between Montreal and Quebec, Classification of Disbursements, &c.—*Continued.*

DETAILS OF DREDGING, LOCALITY AND COST PER CUBIC YARD.

Dredges.	Total cost of operations of each dredge and plant, during fiscal year.	Number of days in operation, each dredge.	Cost per day. Operations of dredge and plant.	Days working each locality.	Cost of work each Locality.	Total cost of operations of each dredge.	Number of cubic yards dredged each locality.	Total cubic yards for each dredge.	Cost per cubic yard. Each locality.	Average cost per cubic Yard for each Dredge.	Kind of material dredged.	Locality of dredging.
	$ cts.		$ cts.		$ cts.	$ cts.			Cts.			
Dredge Lady Aberdeen.	32,287 23	192	168 16	28	4,708 55	.....	186,400	.....	$2\frac{53}{100}$	.....	Blue clay. ...	Contrecœur Bend.
" " .	....	.....	168 16	125	21,020 33	....	627,550	.....	$3\frac{35}{100}$	.....	Clay and stones.	" St. Ours Trav.
" " .	.....	.....	168 16	39	6,558 35	.....	168,800	.....	$3\frac{88}{100}$	.....	Stiff blue clay...	" Petit Trav.
" " .	.....	.....	.....	.....	.....	32,287 23	.....	982,750	.....	$3\frac{28}{100}$	....	
Dredge Lady Minto....	30,652 48	190	161 33	56	9,034 42	....	194,500	.....	$4\frac{64}{100}$	.....	" " ...	" "
" "	.....	.....	161 33	134	21,618 06	.....	449,100	.....	$4\frac{81}{100}$	.....	Blue clay, stones	" Traverse.
" "	.....	.....	.....	.....	.....	30,652 48	.....	643,600	.....	$4\frac{76}{100}$	" " .	" "
Dredge Laurier.....	31,861 19	172	185 24	172	31,861 19	.....	365,630	.....	$8\frac{71}{100}$	.....	Clay and stones.	Pte aux Trembles (haut)
" "	.....	.....	.....	.....	.....	31,861 19	.....	365,630	.....	$8\frac{71}{100}$		
Dredge Laval.....	37,342 62	155	240 92	134	32,283 30	.....	247,175	.....	$13\frac{05}{100}$	.....	" " .	Pte aux Trembles (haut)
" "	....	.....	240 92	21	5,059 32	.....	26,250	.....	$19\frac{27}{100}$	.....	Sand.....	Pte Citrouille.
" "	.....	.....	.....	.....	.....	37,342 62	.....	273,425	.....	$13\frac{65}{100}$	....	
Dredge Lafontaine....	33,503 71	196	170 94	96	16,410 00	....	498,900	.....	$3\frac{35}{100}$	.....	Blue clay.....	Contrecœur Course.
" "	. ...	... . ..	170 94	24	4,102 48	.....	202,500	....	$2\frac{02}{100}$	.....	"	" Bend.
" "	....	.....	170 94	44	7,521 23	. .....	271,800	.....	$2\frac{76}{100}$	.....	"	" Bellmouth.
" "	.....	.....	170 94	32	5,470 00	.....	189,300	.....	$2\frac{88}{100}$	.....	"	" Petit Trav.
" " . . .	.....	.....	.....	.....	.....	33,503 71	.....	1,162,500	...	$2\frac{88}{100}$	"	" " .
Dredge Baldwin.....	32,282 81	191	169 02	191	32,282 81	.....	783,500	.. ...	$4\frac{13}{100}$	.....	Clay and stones.	Pte aux Trembles (haut)
" "	.....	.....	.....	.....	.....	32,282 81	.....	783,500	...	$4\frac{13}{100}$	....	
Dredge J. Israël Tarte.	57,846 51	127	455 48	103	46,914 88	.....	1,867,500	.....	$2\frac{51}{100}$	.....	Soft blue clay...	Lake St. Peter Wh. B. to No. 1 Curve
" " .	.....	.....	.....	24	10,931 63	.....	465,700	.....	$2\frac{35}{100}$	.....	" " ...	" No. 2 "
" " .	.....	.....	.....	.....	.....	57,846 51	.....	2,333,200	.....	$2\frac{48}{100}$	" " ...	" "
Totals.....	255,776 55	1,223	.....	1,223	255,776 55	255,776 55	6,544,605	6,544,605				

PROVINCE OF QUEBEC.

DREDGING BATISCAN RIVER.

river, on the north shore of the St. Lawrence, below Three Rivers
lging was continued in the eastern channel from the railway bridge down.
ousand nine hundred and ninety-six lineal feet of the channel was dredged
t low water, and 81,389 cubic yards of sand, clay and stone materials were

ture during fiscal year, $9,826.14.

DREDGING AT THE BLANCHE SHOALS, OTTAWA RIVER.

ly 1 to November 19, 1902, the close of navigation, the dredge *T. F. M.*
d in this river on the Blanche shoals, on the eastern end of the inside
the lighthouse. Three cuts were made, 2,800 feet in length, to a depth of
60 cubic yards of clay, sand and stone were removed. To complete the
of the channel it will require at least one whole season's work.

DREDGING AT BOUCHERVILLE ISLAND.

lge *Otto,* of the Canadian Construction Company, worked since July 2 to
) included, to complete the dredging of the channel between Ile de la Com-
e Grosbois, opposite Boucherville, to the outer islands. The channel has
) feet by a depth of 6 feet at the lowest water.
ubic yards of blue clay were removed at a cost of $3,646.
lge has worked since September 22 to October 18 included, north of Isle
open up a channel for a ferry line from Pointe aux Trembles to Ile

bic yards of clay were removed at a cost of $456.

DREDGING AT BOUCHERVILLE.

September 11 and October 9, 1902, the dredge *Nithsdale* commenced work
west of the island, opposite Boucherville, making one cut 700 feet long,
feet long, to a depth of 10 feet at low water, and removing 6,331 cubic yards
and boulders.

DREDGING IN THE CHATEAUGUAY RIVER.

lge *Little Giant* worked at this place between July 1 and August 4, 1902,
d widening the mouth of the river to 9 feet below low water. 5,000 cubic
lpan, clay and boulders were removed.
lge *Nithsdale* also worked at this place from October 28 to November 18,
e of navigation, dredging at the western outlet and removing 2,450 cubic
l, mud and boulders. This dredge and plant was then towed to Sorel, and
e winter.
lge resumed operations at this place on May 13, 1903, and continued up to
3, the close of the fiscal year, making three cuts through the boulder shoal
el, 450 feet long each, 25 feet wide and 9 feet deep. Another cut was also

made through a sandbar in the main channel, 700 feet long, 25 feet wide and 9 fe at low water. 10,320 cubic yards of hardpan, clay and sand were removed.

Owing to the severity of the spring freshets, dredging will be required at this pla almost every season.

DREDGING AT COTEAU LANDING.

Dredges *No. 4* and *No. 5* worked at this place between July 2 and August completing the channel through the boulder shoal leading to the new elevator, to depth of 16 feet at low water. The material removed consisted of 9,885 cubic yards clay and boulders.

This material was removed by contract.

DREDGING AT DOUCET'S LANDING.

Doucet's Landing, on the south shore of the St. Lawrence, opposite Three Rivers.

Dredging was done on the eastern side of the wharf at Doucet's Landing.

Two thousand and fifty lineal feet of the channel was dredged to 8 feet at l water, and 12,390 cubic yards of sand, clay and stone were removed.

Expenditure during fiscal year, $1,677.50.

DREDGING AT GRENVILLE.

The dredge *T.F.M. No. 1* worked at this place from July 2 to 8, 1902, widening t turning basin at the entrance of the canal, dredging to a depth of 12 feet at low wat The total quantity of material removed was 3,700 cubic yards of sand and clay.

The new dredge *Richelieu* also worked at this place between June 22 and 30, 19 the close of the fiscal year. One cut was made north of the canal, opposite Dansereau mill, 136 feet long, 22 feet wide and 8 feet deep below zero. The quantity of mater removed was 1,260 cubic yards of gray sand.

DREDGING AT GRAHAM.

Between May 19 and June 30, 1903, the close of the fiscal year, the dredge *T.F. No. 1* worked at this place, making one cut running east of Graham's wharf, 1,800 f long, 22 feet wide and 6 feet deep. One cut on the east side of the wharf, 80 feet lo 22 feet wide and 8 feet deep; 13,560 cubic yards of hardpan and clay were removed.

DREDGING AT LACHINE.

Dredge *No. 4* (Moore) worked at this place between July 2 and 14, 1902. The wo done was at Dawes' wharf, and consisted of one cut 785 feet long, to a depth of 10 fe but owing to the rock bottom the dredge was not capable of completing all the wo required. The material removed consisted of 1,495 cubic yards of hardpan, sa gravel and boulders.

DREDGING IN LAKE TIMISKAMING.

The new dredge *Queen,* which was completed in fall of 1902, worked at New L keard between May 29 and June 30, 1903, the end of the fiscal year. Two cuts w made, one 750 feet long, 26 feet wide and 8 feet deep in the old channel through a c bar. The other cut is situated in front of the wharf, 145 feet long, 26 feet wide a 8 feet deep at low water, to enable vessels to turn. The material removed at this pl was 5,245 cubic yards of clay.

AL PAPER No. 19

DREDGING AT LAVALTRIE.

redge *Nithsdale* worked at this place from July 1 up to August 12, 1902, in front of the Richelieu and St. Lawrence wharfs, to 8 feet at low water, e made, 150 feet long, and 25 feet wide. The material removed consisted of ic yards of sand, mud and boulders.

DREDGING AT NICOLET.

e *Nithsdale* worked at this place between April 20 and May 9, 1903, making 000 feet long, 25 feet wide and 9 feet deep at low water, starting from the northerly direction alongside the breakwater. The material removed con-,055 cubic yards of sand and clay.

DREDGING NICOLET RIVER.

River Nicolet empties into the St. Lawrence on its southern shore, at the foot t. Peter.

der to protect the schooners loading in the harbour from the force of storms t. Peter, a jetty was commenced in 1881.

dredging was done in the channel along the jetty, the quantity removed to 18,590 cubic yards of sand, clay and stone materials.

diture during fiscal year, $3,999.27.

DREDGING AT NICHOLAS ISLAND.

redge *Little Giant* worked at this place between August 5 and September 20, boulder shoal in Lake St. Louis, which obstructed navigation, was removed. was done to a depth of 12 feet below low water. The quantity of material onsisted of 4,325 cubic yards of hardpan, clay and boulders.

redge *Nithsdale* also worked at this place between October 10 and 27, 1902, lder shoal in front of Nicholas Island, making one cut 175 feet long, and one et long to a depth of 15 feet at low water, and removing 697 cubic yards of and boulders.

DREDGING AT NOTRE DAME DE PIERREVILLE.

ing was done at this place by the dredge *St. Louis* from July 1, to November he close of navigation. The work done consisted of widening and deepen-annel on the St. Francis river. The quantity of material removed consisted cubic yards of sand. To complete the whole of the work asked for at this require at least three season's dredging. The dredge and plant were then Sorel and laid up for the winter.

ame dredge resumed operations on May 4, 1903, and continued up to June 30, f the fiscal year, making four cuts in the channel, 473, 384, 249 and 445 feet one cut in the channel at the Tourville Mills 690 feet long, all to a width of The quantity of material removed was 7,795 cubic yards of sand.

DREDGING AT PAPINEAUVILLE.

dredge *T. F. M. No. 1* commenced operations at this place on July 15, 1902, nued up to the 31st of the same month, on the channel leading from the ver to Papineauville bay, making two cuts 1,035 and 345 feet long, respec-a depth of 10 feet at low water. The material removed consisted of 7,780 ds of clay, sand and stone.

DREDGING AT POINTE CLAIRE.

The dredge *No. 4* (Moore) started work at this place on July 15, and continued there up to August 14, 1902, deepening and widening the approach to the wharf to a depth of 10 feet at low water. This dredge also worked at this place from October 17 to November 18, the close of navigation, continuing the widening and deepening of the channel leading to the wharf. The total quantity of material removed was 15,990 cubic yards of hardpan, clay, gravel and boulders.

DREDGING IN THE RICHELIEU RIVER.

Dredging operations were performed on this river by the dredge *Canals No. 1,* between July 1 and November 15, 1902, the close of navigation, at the following places:—Deepening the channel opposite the barracks to 10 feet at low water. One cut was made 1,274 feet long, and three shorter cuts averaging 800 feet in length; 4,260 cubic yards of hardpan and boulders were removed.

The plant was then taken to Iberville and worked on the channel leading from St. John, and along the wharfs at that place. The material removed consisted of 1,200 cubic yards of hardpan and boulders. Work was then resumed in the harbour of St. John, and continued up to the end of the season, removing 15,270 cubic yards of hardpan and boulders.

The dredge was then towed to Ottawa and dismantled, being found in such a shaky condition that it was decided to remove the machinery and build a new hull.

DREDGING IN THE RIVER JESUS.

Dredge *Otto* worked at this place from June 11 to 30, 1903, the close of the fiscal year, making one cut 1,085 feet long, 21 feet wide, and 6 feet deep at low water. The work consisted in making an entrance from the main channel to McDonald's wharf. The quantity of material removed consisted of 3,475 cubic yards of boulders, clay and sand.

DREDGING IN THE RIVIÈRE DU NORD (ST. ANDREWS).

Between August 13 and October 16, 1902, the dredge *No. 4* (Moore) worked at this place with the stonelifter, making a channel through the boulder shoal leading to the landing at St. Andrew's, Que., to a depth of 10 feet at low water; 4,273 cubic yards of hardpan, clay, gravel and boulders were removed.

DREDGING AT ROBERVAL.

The dredge *P. V. Savard* worked at this place between July 14 and October 11, 1902, making a depth of 6 feet around the wharf and at the entrance of the harbour.

The total quantity of material removed was 9,805 cubic yards of clay and sawdust. Some delay was occasioned through necessary repairs to the dredge and tug.

The expenditure, including repairs before the beginning of operations, amounted to $2,531.45.

DREDGING AT SOREL.

The dredge *Nithsdale* worked at this place between August 14 and September 10, 1902, deepening in front of the government wharf to 12 feet at low water. The quantity of material removed consisted of 8,050 cubic yards of sand, mud and boulders.

DREDGING AT ST. MAURICE RIVER.

The River S. Maurice flows southward and empties into the St, Lawrence at Three Rivers.

AL PAPER No. 19

Grandes Piles up to La Tuque, a distance of 66 miles, there is a good channel
s drawing less than two feet six inches of water.
ng the high water the type of the dredge *St. Maurice* was changed from a clam
bucket.
te à Trudel, on the 3rd mile above Grande Piles.—The dredging performed last
ng filled in considerably the dredge was put at work on August 4, and 2,690
ds of sand and gravel were removed, making a channel 44 feet wide and 970
ngth. This work was completed on August 19.
ux Morpions, on the 9th mile.—The channel dredged last year having filled in
bly, the dredge resumed work on August 21, where 5,255 cubic yards of sand,
ay and puddle were removed, making a channel 40 feet wide by 1,072 feet in
The work was completed on September 24.
inac Shoal, on the 14th mile.—The dredge was removed to that place on Sep-
5, where the boats cannot go beyond at low water The dredging was discon-
October 30, 1902.
e thousand four hundred and forty-five cubic yards of gravel, clay and puddle
oved, making a channel 40 feet by 804 feet in length.
0.01 is the total expenditure for the fiscal year 1902-03.
e dredging was also done at the outlet of the eastern channel by the dredge
e. The work was commenced on July 21, and discontinued on October 25.

ty nine thousand and thirty cubic yards of sand, clay and boulders were
from the channel 7,100 feet in length.
7.50 is the total expenditure for the year 1902-03.

DREDGING AT THREE RIVERS.

April 25 to May 3, 1903, the dredge *St. Pierre* worked to remove a small shoal
the St. Maurice Lumber Company's wharf at Three Rivers.
hundred and eighty feet of the channel were dredged to 8 feet at low water,
cubic yards of sand and clay materials were removed.
.50 is the total expenditure for the season 1903.

DREDGING AT VALLEYFIELD.

een July 2 and October 4, 1902, the dredge *No. 4* (Daly) was working at this
npleting the channel leading to the cotton mills. Two cuts were made 865
to a depth of 10 feet at low water. The material removed consisted of 21,225
ds of stone.

PROVINCE OF ONTARIO.

DREDGING AT ADOLPHUSTOWN.

dredge *Sir Richard* was working at this place on July 1, 1902, and continued
to the 13th of the same month finishing the dredging required at the town
The total quantity of material removed at this place consisted of 800 cubic
sand. The work performed enabled the passengers and freight steamers to
the wharfs and unload their cargoes.

DREDGING AT BOWMANVILLE.

The dredge *Nipissing* continued the work at this place, between July 1 and 12, 1902, deepening between the piers and through the bars at the entrance to the harbour, to a depth of 14 feet below low water. It also worked at this place between July 30 and September 22, 1902, deepening and widening the entrance to the piers and along between the piers from the lighthouse to the coal sheds. The total quantity of material removed consisted of 30,300 cubic yards of hard sand and clay. Since the sheet piling was done to the east pier, the work done by the dredge has been more satisfactory, but dredging will be required at this port from time to time, owing to the wash of sand from the lake during heavy seas.

DREDGING AT COLLINGWOOD.

Dredging was performed at this place by the dredge *Challenge* from July 1, 1902, to the close of navigation. Two cuts were made along the south side of Charlton's dock 400 feet long, 25 feet wide, and one cut along the north side 375 feet long, 25 feet wide, all to an average depth of 12 feet at low water. On August 28 the plant was removed to the entrance of the dry dock and worked there up to the end of October, when orders were given to commence work on the shoal running from the freight shed to the dry dock, where work was continued up to November 18, the close of navigation. Considerable lost time was experienced at this place, owing to the repeated breakages caused by the hard nature of the material to be dredged. The quantity of material removed at this place consisted of 24,155 cubic yards of hardpan, clay, stone and boulders.

Dredge *Challenge* resumed work at this place, at Charlton's mill, on May 28, and continued to June 30, the close of the fiscal year. One cut was made on south side of lumber piles 540 feet long, 25 feet wide, and to a depth of from 10 to 15 feet. Another cut was made back of lumber piles and running into mill pond 291 feet long, 25 feet wide, and ranging in depth from 14 to 15 feet of water. Two other cuts on each side of the slab dock were made, 372 and 282 feet long, 25 feet wide, ranging in depth from 10 to 13 feet. The quantity of material removed at this place consisted of 7,020 cubic yards of boulders, hardpan, clay and sand.

DREDGING AT COBOURG.

The dredge *Sir Richard* worked at this place between July 16 and November 18, 1902, the close of navigation. The work consisted of two cuts along the west or middle pier 2,000 feet long, to a depth of 15 feet at low water. Also from abreast of the lighthouse, on the east pier, extending 416 feet inside of harbour, leaving the channel inside of harbour 120 feet wide and 15 feet deep at low water. A small ridge about 100 feet long and 20 feet wide was removed inside the inner breakwater. The material removed at this place consisted of 32,825 cubic yards of hard packed sand.

Cobourg harbour being one of the most important harbours on Lake Ontario, about three months' dredging should yet be done to complete the work required.

DREDGING AT FORT WILLIAM.

The entrance channel to River Kaministiquia was widened and deepened in places to a depth of 22 feet below zero of gauge; also in the river opposite the Imperial oil dock and C.P.R. Elevators B and C.

A turning basin was made at the junction of the Kaministiquia and Mission river to a depth of 19 feet below zero.

Above the C.P.R. Elevator D to the Canadian Northern Railway's coal dock at West Fort William the channel has been deepened and widened in places, and when

PAPER No 19

will give a channel 125 feet in width, with a minimum depth of 18 feet 6
w zero.
tal amount dredged was 333,425 cubic yards, at a cost of $59,504.91.

DREDGING AT GANANOQUE.

ng operations were performed at this place by the dredge *No. 4 Cohen* from
June 30, the close of the fiscal year, deepening the channel in the Gananoque
epth of 10 feet, and along the front of Rathbun's dock to a depth of 14 feet.
4,500 cubic yards of clay, sand, sawdust and slabs.
ork was still being performed at the close of the fiscal year.

DREDGING AT GODERICH.

the fiscal year 1902-3 dredging was done at the entrance of the harbour in
ep the channel to a depth of 20 feet, and also alongside of the lumber dock.
ssels of 12 to 14 feet draught to approach it and unload.
aterials consisted of loose rock, gravel and clay, and the amount removed
cubic yards at a cost of $12,543.71, or 13·69 cents per cubic yard.
the season of 1902 the dredge was occupied 257 hours and 25 minutes, at a
59.33, redredging sand which had drifted into the deepened entrance chan-
action of the fall and spring storms; and during the past season of 1903 the
again occupied at the same place, and for the same reason, 273 hours and 50
a cost of $2,190.66, and under the present condition of the entrance to the
will obviously be necessary to do the same amount of dredging from year to
er to keep the channel at its present depth of 20 feet.

DREDGING AT HAWKESBURY.

ng at this place was performed by the dredge *Little Giant* between Septem-
2, and the close of navigation. The work consisted in widening and deepen-
nnel from the Ottawa river to the wharfs at Hawkesbury, to a depth of 9 feet
r. The material removed consisted of 17,755 cubic yards of hardpan, clay
rs.
y 8 this dredge resumed operations at this place and continued up to June
e close of the fiscal year. The work consisted in the continuation of the
nd deepening of the channel from the Ottawa river to the wharfs at Hawkes-
material removed consisted of 17,575 cubic yards of hardpan and boulders.

DREDGING AT KINGSVILLE.

ng was done at this place by the dredge *Ontario* between July 1 and Septem-
pening and widening the channel through the sand bar which forms at the
the harbour. A channel was completed between the piers, 400 feet long, 100
o a depth of 12 feet at low water. The material removed consisted of 24,560
of fine sand, quick sand, clay and boulders. While a good entrance to the
r immediate requirements was made, about 2 or 3 months dredging is yet
make this harbour a suitable one for the shipping interests at this place.
he cribwork in the piers being built to a depth of 14 feet, dredging cannot be
ied on to a greater depth than 12 feet.

DREDGING IN THE KAMINISTIQUIA RIVER.

edge *Arthur* worked at this place from July 2 to September 27, 1902. Three
feet long, 22 feet deep were made in the channel leading to the mouth of the
ut 75 feet long and 22 feet deep was made west of the first buoy. Two cuts,

1,500 and 400 feet long, 22 feet deep, were made along the front of the new coal doc and one cut 600 feet long on the north side opposite the new coal dock. The materi removed consisted of 40,762 cubic yards of clay and sand.

Dredge *No. 6* also worked at this place between July 2 and November 29, 1902, t close of navigation, deepening the channel in the Kaministiquia river to 22 feet. T material removed consisted of 237,475 cubic yards of sand, mud, clay and stone.

DREDGING AT KINGSTON.

Between May 7 and June 30, 1903, the close of the fiscal year, the dredge *Sir Richa* worked at this place making two cuts, one 785 feet long, 30 feet wide, and 14 feet de at low water, making an approach to and along the front of the K. & P. railway whar The second cut was 560 feet long, 25 feet wide and 14 feet deep, running parallel wi first cut towards the swing bridge. Both these cuts have a channel 55 feet wide and feet deep at low water; 16,725 cubic yards of hardpan, boulders and clay were remove

DREDGING AT NEWCASTLE.

The dredge *Nipissing* worked at this place between July 14 and 29, 1902. The wo done consisted of deepening the channel along the west side of the east pier, to allo the grain and coal vessels an entrance to unload their cargoes. 8,625 cubic yards sand were removed. The work done proved satisfactory for present requirements.

DREDGING AT PICKERING.

Dredging was performed at this place by the dredge *Nipissing* between Septemb 26 and November 18, the close of navigation. One cut was made along the west side the east pier, from about 200 feet outside the full length of the pier, and to about 5 inside the harbour to a depth of 14 feet at low water. Two cuts were also made alo the front of the ice-house , about 600 feet long, 25 feet wide, and to a depth of abo 14 feet. The quantity of material removed consisted of 22,838 cubic yards of sand a clay.

DREDGING AT PORT ARTHUR.

Contractor C. S. Boone's dredge *Kingsford* commenced dredging in the harbour August 18, 1902, starting from the opening at breakwater going towards the C.P. wharf, and the Great Lakes dredging company's dredges *No. 5* and *Arthur* commenc on September 29 from the same place going towards the C.N.R. elevator wharf, a continued until the close of navigation. Work was resumed in the harbour by t above named dredges in the spring. Some dredging has been done in the channel o side of the breakwater.

The total amount dredged during the fiscal year ending June 30, 1903, was 155,9 cubic yards (scow measurement), at a cost of $29,146.02.

DREDGING AT PORT HOPE.

Work at this place was done by the dredge *Nipissing* between April 23 and Ju 30, 1903, the close of the fiscal year. Four cuts were made at the main entrance of t harbour, 350, 700, 700 and 550 feet long, 25 feet wide, and 14 feet deep at low wat Two cuts were made at the entrance to the old harbour 400 and 600 feet long, 25 fe wide and 14 feet deep; two cuts were also made inside the new harbour, 300 feet lo each, 25 feet wide, and 12 feet deep; these two cuts could not be dredged to 14 feet the bottom consisted of shell rock. The material removed at this place was 26,2 cubic yards of mud, sand, clay and stone, boulders and hardpan.

Blasting operations must be performed at this place before the whole work requir can be completed.

PAPER No. 19

DREDGING AT PRESCOTT.

Cleveland's dredge *D. Stewart* with necessary plant started dredging on June C.P.R., coal dock, and was still in operation at the end of the fiscal year.

DREDGING AT RONDEAU.

edge *Ontario* started work at this place on September 22, 1902, on the bar piers, making one cut 700 feet long, 25 feet wide and 19 feet deep, and one long to the same depth. These make a channel 700 feet long, 50 feet wide deep through the bar, out to 17 feet of water below zero in the lake. To et of water at the lake end it will require an extension of this channel, at et. Three cuts were also made through the shoal between the piers, 350 feet ne cut 150 feet long, to a depth of 19 feet at low water. A channel leading Erie and Detoit River railway dock was also made 350 feet long, 75 feet feet deep; two cuts were also made inside the new harbour, 300 feet long t wide and 12 feet deep; these two cuts could not be dredged to 14 feet, as consisted of shell rock. The material removed at this place was 26,287 cubic d, sand, clay and stone, boulders and hardpan.

rt being a harbour of refuge would require at least three or four months' meet the requirements.

dge *Ontario* again worked at this place between May 11 and June 30, the iscal year. Removing the bar outside of the piers and two shoals between Four cuts were made, 650, 650, 425 and 100 feet long, and 17 feet deep at water through the bar. This work was practically the removal of material up during the past winter. This gives a channel 650 feet long, 125 feet feet deep. Four other cuts were made, one of 340 feet and three of 250 feet deep and 100 feet wide on a shoal which forms yearly between the of an old crib between the piers was also removed. Another cut was also east side of the west pier which was left unfinished last year, 100 feet long, and 19 feet deep. The quantity of material removed was 16,390 cubic d.

DREDGING AT WOLFE ISLAND.

nnel cut across the Blanket shoal was instituted to provide an alternate the St. Lawrence river from Lake Ontario for freight vessels of 14 feet between the upper lake ports and the ocean ports of the lower St. Law- permitting them to cross to the American channel—which is the only one buoyed at present for traffic—at the foot of Wolfe island, and thus escape dangerous Charity shoals that lay off the south-west of Wolfe island in o, and which they would be obliged to do in entering or leaving the river entrance.

oals have been the cause of several large wrecks during the past few years; ken ledges of rock, and at present defined by an American gas buoy and ys. They are in Canadian territory.

e present time vessels of 14 feet draught have been obliged to confine their south entrance, or the American channel, at the foot of Wolfe island, ex- es of very high water.

is 300 feet wide on the bottom, nearly a mile in length, and 18 feet deep at n water level.

ined by a black spar buoy at the north end, and a red gas buoy at the south

ns were commenced August 20, 1902, by R. Macdonald's dredge *No. 5*— d by *No. 6*—and the necessary plant, and continued until December 6, 1902.

The work was laid out on lines determined from a survey of the locality made in 1900. In February, 1903, a hydrographic survey in close uniform sections was made of the entire locality from the ice, and the final boundaries of the cut closely defined.

Dredging started with the same plant on April 13, 1902, and continued in operation at the close of the fiscal year.

The original appropriation, granted last year for this work, was $10,000, and at the session of Parliament of 1903 an additional amount of $8,000 was granted to complete the work, making a total of $18,000.

Cubic yards removed to date, 96,600.

Expenditure for same, $14,300.

Cost per cubic yard (scow measurement), $0·1479. Material running from soft silt and fine sand to stiff blue clay and cemented gravel or hardpan.

STATEMENT of Expenditure and quantities of material removed by the various Dredges, at different localities, in Ontario and Quebec, during the fiscal year ended June 30, 1903.

Dredge.	Location.	Yards removed.	Character of Soil.	Expenditure.	Cost per yard.
				$ cts.	cts.
Challenge	Collingwood	31,175	H. pan, sand, blds. & clay	7,757 12	24 9/10
Ontario	Kingsville	24,560	Clay and quick sand	8,257 34	13 3/4
"	Rondeau	38,360	Sand and gravel		
Nipissing	Bowmanville	30,300	Hardpan	8,819 08	10 1/10
"	Newcastle	8,625	Clay and sand		
"	Pickering	22,838	Rock and mud		
"	Port Hope	26,287	Rock and mud		
Sir Richard	Adolphustown	800	Sand	13,078 32	26
"	Cobourg	32,825	Hardpan and boulders		
"	Kingston	16,725	Clay		
Queen	Temiskamingue	5,245	Sand and clay	1,029 66	19 3/4
Richelieu	Grenville	1,260	Gray sand	624 35	49 1/2
St. Louis	Notre-Dame de Pierreville	28,675	Sand	3,086 66	10 3/4
Canals No. 1	St. Johns	19,530	Hardpan and boulders	3,790 53	18 1/4
"	Iberville	1,200	" "		
Nithsdale	St. Ignace	105	Sand, clay, boulders	12,395 48	26 1/2
"	Lavaltrie	12,670	Mud and stone		
"	Sorel	8,050	"		
"	Boucherville	6,331	"		
"	Nicholas Island	697	"		
"	Nicolet	6,055	"		
"	Chateauguay	12,770	"		

STATEMENT of Expenditure.—*Continued.*

ge.	Location.	Yards removed.	Character of Soil.	Expenditure.	Cost per yard.
				$ cts.	cts.
lo. 1....	Papineauville.....	7,780	Clay, hardpan, sand & stone.		
	Blanche shoals.....	44,760	" "	12,644 49	$18\frac{3}{15}$
	Graham.....	13,560	" "		
	Grenville.....	3,700	" "		
nt.....	Chateauguay.....	5,000	Clay.....		
	Nicholas Island.....	4,325	Hardpan.....	15,322 45	$34\frac{1}{3}$
	Hawkesbury.....	35,330	Boulders and stone.....		
ly)	Valleyfield.....	21,225	Rock and stone.....	6,446 00	$30\frac{2}{15}$
.....	River Jesus.....	3,475	Clay, sand and gravel.....	1,098 00	$31\frac{2}{3}$
ore)....	Lachine.....	1,495	Clay and hardpan.....		
.....	Pointe Claire.....	15,990	" "	11,587 20	$53\frac{1}{4}$
.....	St. Andrews.....	4,273	" "		
ien).....	Gananoque.....	14,500	Blds., clay and gravel.....	3,326 35	23
.....	Coteau Landing.....	9,885	Boulders and clay.....	2,668 40	27
... .	Kaministiquia.....	237.475	Clay, mud and sand.....	35,696 25	15
. .....	Port Arthur.....	50,955	Clay, mud and sand.....	7,793 35	$15\frac{1}{3}$
. .....	Kaministiquia.....	40,762	Clay and sand.....		
. .....	Port Arthur.....	5,086	"	6,945 90	$15\frac{3}{10}$
.....	Port Arthur	46,080	Sand, mud and clay.....	6,912 00	15

Classification of Disbursements of the Dredges during the Year ended 30th June, 1903.

DREDGE 'CHALLENGE.'

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	420 00	420 00	407 58	414 76	316 00	30 00	30 00	.....	112 37	315 65	283 23	1,717 64	4,467 23
Coal	.....	190 82	290 10	331 46	332 81	56 00	.....	.....	.....	.....	.....	388 90	1,590 09
Provisions	.....	113 00	168 76	65 60	193 41	.....	.....	.....	.....	38 48	.....	201 96	781 20
Stores	30 00	33 00	24 82	9 43	6 23	15 06	.....	.....	.....	76 50	.....	117 81	312 85
Equipment	.....	.....	.....	.....	.....	.....	8 03	.....	.....	27 50	.....	50 33	85 86
Repairs	.....	46 07	4 89	68 84	49 38	7 29	.....	.....	.....	73 55	.....	156 97	406 99
Contingencies	.....	.....	.....	3 98	.....	52 88	.....	.....	.....	28 51	.....	27 53	112 90
Totals	450 00	802 89	896 14	894 07	897 83	161 23	38 03	.....	112 37	560 19	283 23	2,661 14	7,757 12
Working expenses	450 00	756 82	891 25	825 23	848 45	153 94	38 03	.....	112 37	486 64	283 23	2,504 17	7,350 13
Repairs, ordinary	.....	46 07	4 89	68 84	49 38	7 29	.....	.....	.....	73 55	.....	156 97	406 99
Totals	450 00	802 89	896 14	894 07	897 83	161 23	38 03	.....	112 37	560 19	283 23	2,661 14	7,757 12

DREDGE 'ONTARIO.'

Wages	411 13	413 60	410 84	413 97	336 17	17 47	30 00	.....	224 02	395 08	402 91	811 36	3,866 55
Coal	355 10	.....	174 00	109 20	211 05	.....	191 75	.....	.....	.....	.....	441 14	1,482 24
Provisions	108 67	109 45	108 48	109 33	196 41	.....	.....	.....	.....	.....	.....	333 67	966 01
Stores	26 91	55 18	74 24	15 07	14 80	7 36	.....	.....	.....	46 07	.....	91 37	331 00
Equipment	5 65	346 89	.....	5 00	.....	.....	.....	.....	.....	.....	.....	.....	357 54
Repairs	.....	15 82	9 30	2 55	25 51	22 53	.....	.....	.....	179 61	.....	830 76	1,086 02
Contingencies	.....	17 27	.....	17 25	.....	64 46	6 50	.....	.....	.....	.....	62 70	168 18
Totals	907 46	958 21	776 86	672 37	783 94	111 82	228 25	.....	224 02	620 76	402 91	2,570 94	8,257 54
Working expenses	907 46	942 39	767 56	669 82	758 43	89 29	228 25	.....	224 02	441 15	402 91	1,740 24	7,171 52
Repairs, ordinary	.....	15 82	9 30	2 55	25 51	22 53	.....	.....	.....	179 61	.....	830 70	1,086 02
Totals	907 46	958 21	776 86	672 37	783 94	111 82	228 25	.....	224 02	620 76	402 91	2,570 94	8,257 54

	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Totals.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	375 00	375 00	367 83	365 00	365 00	.....	160 00	.....	154 20	349 83	474 09	784 00	4,242 95
Coal	.....	451 09	374 80	.....	481 66	473 04	.....	.....	.....	363 05	.....	958 79	2,629 43
Provisions	.....	103 00	103 00	102 25	209 00	.....	.....	.....	.....	60 00	.....	248 84	826 09
Stores	45 11	9 07	6 75	17 37	18 04	5 50	12 18	.....	.....	131 44	.....	103 09	348 55
Equipment	.....	.....	.....	7 00	.....	.....	8 03	.....	.....	12 30	.....	.....	27 33
Repairs	.....	10 60	34 24	60 39	2 46	1 90	.....	.....	.....	233 77	.....	285 55	628 91
Contingencies	.....	.....	7 84	21 05	8 19	25 45	.....	.....	.....	39 43	.....	13 86	115 82
Totals	420 11	948 76	894 46	573 06	1,084 35	505 89	180 21	.....	154 20	1,189 82	474 09	2,394 13	8,819 08
Working expenses	420 11	938 16	860 22	512 67	1,081 89	503 99	180 21	.....	154 20	956 05	474 09	2,108 58	8,190 17
Repairs, ordinary	.....	10 60	34 24	60 39	2 46	1 90	.....	.....	.....	233 77	.....	285 55	628 91
Totals	420 11	948 76	894 46	573 06	1,084 35	505 89	180 21	.....	154 20	1,189 82	474 09	2,394 13	8,819 08

DERDGE 'SIR RICHARD.'

Wages	465 00	370 00	345 00	437 92	386 67	506 24	90 65	30 00	172 35	518 22	381 29	890 46	4,693 80
Coal	78 20	575 00	.....	.....	505 45	.....	62 20	.....	.....	126 00	.....	451 23	1,798 08
Provisions	103 00	253 15	.....	99 17	206 63	.....	33 60	.....	.....	.....	.....	192 85	888 40
Stores	27 87	89 67	2 00	19 80	2 55	.....	109 65	.....	160 93	170 20	.....	80 91	663 58
Equipment	25 20	1,901 73	.....	.....	.....	.....	.....	.....	.....	29 37	.....	.....	1,956 30
Repairs	293 90	167 34	121 58	21 73	99 29	.....	227 48	.....	.....	314 68	51 57	888 92	2,186 49
Pilotage	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15 00	15 00
Contingencies	65 96	23 60	4 45	2 64	.....	472 35	30 20	.....	.....	52 20	40 22	185 05	876 67
Totals	1,159 13	3,380 49	473 03	581 26	1,200 59	978 59	553 78	30 00	333 28	1,210 67	473 08	2,704 42	13,078 32
Working expenses	865 23	3,213 15	351 45	559 53	1,101 30	978 59	326 30	30 00	333 28	895 99	421 51	1,815 50	10,891 83
Repairs, ordinary	293 90	167 34	121 58	21 73	99 29	.....	227 48	.....	.....	314 68	51 57	888 92	2,186 49
Totals	1,159 13	3,380 49	473 03	581 26	1,200 59	978 59	553 78	30 00	333 28	1,210 67	473 08	2,704 42	13,078 32

CLASSIFICATION OF DISBURSEMENTS of the Dredges during the Year ended June 30, 1903—*Continued.*

DREDGE 'QUEEN'

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages												150 00	150 00
Coal												138 15	138 15
Provisions												272 17	272 17
Stores												5 00	5 00
Equipment												28 46	28 46
Repairs												35 59	35 59
Contingencies												400 29	400 29
Totals												1,029 66	1,029 66
Working expenses												994 07	994 07
Repairs, ordinary												35 59	35 59
Totals												1,029 66	1,029 66

DREDGE 'RICHELIEU.'

Wages												448 75	448 75
Provisions												30 60	30 60
Contingencies												145 00	145 00
Totals												624 35	624 35
Working expenses												624 35	624 35
Totals												624 35	624 35

	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Totals.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	350 00	350 00	350 00	350 00	...	...	...	...	...	209 35	370 00	370 00	2,349 35
Provisions	...	103 15	103 00	103 00	103 00	68 66	...	...	...	36 00	...	206 30	723 11
Equipment	...	...	...	...	...	...	...	...	...	...	...	...	11 55
Repairs	...	...	...	7 95	3 10	0 50	...	...	...	...	...	...	...
Contingencies	...	...	...	...	...	0 90	...	...	...	...	...	1 75	2 65
Totals	350 00	453 15	453 00	460 95	106 10	70 06	...	...	...	245 35	370 00	578 05	3,086 66
Working expenses	350 00	453 15	453 00	453 00	103 00	69 56	...	...	...	245 35	370 00	578 05	3,075 11
Repairs, ordinary	...	...	...	7 95	3 10	0 50	...	...	...	...	...	...	11 55
Totals	350 00	453 15	453 00	460 95	106 10	70 06	...	...	...	245 35	370 00	578 05	3,086 66

DREDGE CANALS 'No. 1.'

Wages	415 00	415 00	415 00	415 00	281 00	...	...	...	...	...	...	415 00	2,356 00
Coal	...	10 25	317 37	4 75	6 00	119 28	...	...	...	...	...	...	457 65
Provisions	110 00	110 00	110 00	110 00	110 00	91 34	...	...	...	...	...	...	641 34
Stores	...	15 35	11 34	10 06	5 46	4 13	...	...	...	...	...	...	46 34
Equipment	...	...	...	1 85	...	...	...	...	...	...	...	...	1 85
Repairs	...	4 42	45 71	98 19	3 49	27 34	...	...	...	...	...	...	179 15
Towage	...	...	...	...	...	7 00	...	...	...	...	...	...	7 00
Contingencies	60 00	...	11 00	...	...	26 95	3 25	...	...	...	...	...	101 20
Totals	585 00	555 02	910 42	639 85	405 95	276 04	3 25	...	...	...	...	415 00	3,790 53
Working Expenses	585 00	550 60	864 71	541 66	402 46	248 70	3 25	...	...	...	...	415 00	3,611 38
Repairs, ordinary	...	4 42	45 71	98 19	3 49	27 34	...	...	...	...	...	...	179 15
Totals	585 00	555 02	910 42	639 85	405 95	276 04	3 25	...	...	...	...	415 00	3,790 53

CLASSIFICATION OF DISBURSEMENTS of the Dredges during the year ended June 30, 1903—*Continued.*

DREDGE "NITHSDALE."

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	375 00	378 00	378 00	386 00	59 00	33 00				211 37	392 00	398 00	2,610 37
Coal				2 40			2 00					2 50	6 90
Provisions		110 00	110 00	110 00	127 95	86 09				55 00		220 00	819 04
Stores			4 22		3 30		3 90					25 95	37 37
Repairs					4 80					1 50			6 30
Towage					20 00								20 00
Contingencies	1,240 00	1,240 00	1,200 00	1,240 00	850 50	5 00						3,120 00	8,895 50
Totals	1,615 00	1,728 00	1,692 22	1,738 40	1,065 55	124 09	5 90			267 87	392 00	3,766 45	12,395 48
Working expenses	1,615 00	1,728 00	1,692 22	1,738 40	1,060 75	124 09	5 90			266 37	392 00	3,766 45	12,389 18
Repairs, ordinary					4 80					1 50			6 30
Totals	1,615 00	1,728 00	1,692 22	1,738 40	1,065 55	124 09	5 90			267 87	392 00	3,766 45	12,395 48

DREDGE "T. F. M. No. 1."

Wages	84 00	78 00	78 00	81 00	54 00						45 00	123 00	543 00
Contingencies	1,713 45	2,006 34	2,074 50	2,148 00	1,200 00						3 15	2,956 05	12,101 49
Totals	1,797 45	2,084 34	2,152 50	2,229 00	1,254 00						48 15	3,079 05	12,644 49
Working expenses	1,797 45	2,084 34	2,152 50	2,229 00	1,254 00						48 15	3,079 05	12,644 49
Totals	1,797 45	2,084 34	2,152 50	2,229 00	1,254 00						48 15	3,079 05	12,644 49

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Totals.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	65 00	65 00	70 00	67 50	40 00						50 00	127 50	485 00
Towage									400 00				400 00
Contingencies	2,029 00	1,493 00	1,818 70	1,960 00	1,516 00						1,576 00	4,044 75	14,437 45
Totals	2,094 00	1,558 00	1,888 70	2,027 50	1,556 00				400 00		1,626 00	4,172 25	15,322 45
Working expenses	2,094 00	1,558 00	1,888 70	2,027 50	1,556 00				400 00		1,626 00	4,172 25	15,322 45
Totals	2,094 00	1,588 00	1,888 70	2,027 50	1,556 00				400 00		1,626 00	4,172 25	15,322 45

DREDGE 'No. 4 DALY.'

Wages	78 00	78 00	90 00										246 00
Contingencies	2,000 00	1,988 00	2,212 00										6,200 00
Totals	2,078 00	2,066 00	2,302 00										6,446 00
Working expenses	2,078 00	2,066 00	2,302 00										6,446 00
Totals	2,078 00	2,066 00	2,402 00										6,446 00

CLASSIFICATION OF DISBURSEMENTS of the Dredges during the Year ended June 30, 1903—*Continued.*

DREDGE 'OTTO.'

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages												78 00	78 00
Contingencies												1,020 00	1,020 00
Totals												1,098 00	1,098 00
Working expenses												1,098 00	1,098 00
Totals												1,098 00	1,098 00

DREDGE No. 4 'MOORE.'

Wages	75 00	78 00	84 00	159 00	48 00								444 00
Contingencies	1,896 00	2,032 00	2,048 00	4,007 20	1,160 00								11,143 20
Totals	1,971 00	2,110 00	2,132 00	4,166 20	1,208 00								11,587 20
Working expenses	1,971 00	2,110 00	2,132 00	4,166 20	1,208 00								11,587 20
Totals	1,971 00	2,110 00	2,132 00	4,166 20	1,208 00								11,587 20

Totals												3,326 35	3,326 35
Working expenses												3,326 35	3,326 35
Totals												3,326 35	3,326 35

DREDGE No. 4 & 5 'COTEAU LANDING.'

Wages	124 00												124 00
Contingencies	2,544 40												2,544 40
Totals	2,668 40												2,668 40
Working expenses	2,668 40												2,668 40
Totals	2,668 40												2,668 40

DREDGE No. 6 'BOWMAN & CO.'

Contingencies	8,629 50	8,134 50	6,695 25	5,888 85	6,348 15								35,696 25
Totals	8,629 50	8,134 50	6,695 25	5,888 85	6,348 15								35,696 25
Working expenses	8,629 50	8,134 50	6,695 25	5,888 85	6,348 15								35,696 25
Totals	8,629 50	8,134 50	6,695 25	5,888 85	6,348 15								35,696 25

CLASSIFICATION of Disbursements of Dredges during the Year ended June 30, 1903 —*Continued.*

DREDGE 'KINGSFORD.'

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Contingencies			1,520 10	3,039 15			3,234 00						7,793 25
Totals			1,520 10	3,039 15			3,234 00						7,793 25
Working expenses			1,520 10	3,039 15			3,234 00						7,793 25
Totals			1,520 10	3,039 15			3,234 00						7,793 25

DREDGE 'ARTHUR.'

Wages	78 00	69 00	84 00										231 00
Contingencies	2,080 00	1,832 00	2,040 00	762 90									6,714 90
Totals	2,158 00	1,901 00	2,124 00	762 90									6,945 90
Working expenses	2,158 00	1,901 00	2,124 00	762 90									6,945 90
Totals	2,158 00	1,901 00	2,124 00	762 90									6,945 90

DREDGE No. 5 'GREAT LAKES.'

Contingencies			123 30	3,192 75	2,595 95								6,912 00
Totals													6,912 00
Working expenses			123 30	3,192 75	2,595 95								6,912 00

PROVINCE OF MANITOBA.

DREDGING AT GYPSUMVILLE.

edge *Manitoba* was put to work at Gypsumville during the month of August n 1902, and worked until the latter end of September.

,677 cubic yards of hardpan and boulders were excavated, also a channel 50 t the shore end, and increasing in width to 70 feet outside was excavated. structions that were in the harbour, such as sunken piers, formerly built by company, were also removed.

nount of work, as well as the manner in which it was done, appeared to e interested in navigation, as it was much needed work. No work could be he dredge to deepen the channel through the reef south of Manitoba House, ndy Point without auxiliary tug power to insure the safety of the plant.

DREDGING THE MOUTH OF RED RIVER.

dredging was done on the new channel, particularly the lake end of same, hannel cuts across a sand bank that borders the lake shore. A good deal of st going over the channel time and again, as large quantities of sand and also some quick sand, kept running into the excavation after every blow rth.

to necessary repairs to be done to the dredging plant, the work was stopped er 20, the dredge *Winnipeg*, which was doing this work, as well as the tug and thoroughly repaired during the winter, and the work of dredging the new s resumed June 1, 1903, and continued to the last of the same month. The e channel excavated averages 65 feet, and the depth of water 9 feet.

nount of clay and sand removed was 48,710 cubic yards, at a cost of or 21⅓ cents per yard.

DREDGING AT WHITE MUD RIVER.

edge *Manitoba* was towed to the mouth of the White Mud river September it the lateness in the season, the rough and stormy weather, together with f fuel and tug power, necessitated abandoning the work, and laying up the winter quarters. The work was, however, resumed in the spring of 1903, at the mouth deepened, and a few of the bad bends of the river straightened. dredging was also done at Mr. Barr's landing, and the river considerably t all events, it appeared to satisfy those interested in its navigation. The as all cast to one side, and in some cases handled twice in order to prevent lity of its running back into the excavation.

REPAIRS TO DREDGING PLANT.

ork of repairs of both the dredges *Winnipeg* and *Manitoba* were proceeded g the winter, and the sum of $11,858.63 was expended in doing the said

edge *Winnipeg* had to be rebuilt from the bottom up, new masts, new anchor ls, &c.

gs *Sir Hector* and *Victoria* required some replanking, and a new coal barge g, 20 feet wide, 5 feet high, was built with 6-inch side timbers, 8 by 8-inch n three solid bulkheads.

edge *Manitoba* also needed new spuds, and recaulking. One of her scows was ted, and converted into a regular dump scow with pockets, traps, rollers, &c. f the timber used was oak, which was obtained at Brokenhead river.

CLASSIFICATION OF DISBURSEMENTS of the Dredges in the Province of Manitoba, during the Year ended June 30, 1903.

DREDGE 'WINNIPEG.'

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	614 94	634 80	650 00	434 87	281 00	82 40					806 80	712 33	4,217 14
Coal	881 40	596 26	309 28	242 63								216 05	2,245 62
Wood	21 03											13 00	34 03
Provisions	341 44	284 14	202 85	78 85	20 05						117 20	231 35	1,275 88
Stores			8 95									38 70	47 65
Equipment	321 16	31 65	39 72	248 41							129 95	602 43	1,373 52
Repairs	7 75	28 69	41 50	14 89	12 65	8 25					228 96	517 99	860 68
Contingencies	98 28	25 40	33 00	62 75	18 90	25 16						81 54	345 03
Totals	2,286 00	1,600 94	1,285 30	1,082 40	332 60	115 81					1,282 91	2,413 39	10,399 35
Working expenses	2,278 25	1,572 25	1,243 80	1,067 51	319 95	107 56					1,053 95	1,895 40	9,538 67
Repairs, ordinary	7 75	28 69	41 50	14 89	12 65	8 25					228 96	517 99	860 68
Repairs, extraordinary													
Totals	2,286 00	1,600 94	1,285 30	1,082 40	332 60	115 81					1,282 91	2,413 39	10,399 35

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts	$ cts.
Wages	692 65	444 64	458 00	478 09	82 10	80 00	80 60	86 40	84 90		623 50	964 00	4,074 88
Coal													
Wood			23 45	20 25					227 00		34 00	56 25	360 95
Provisions	332 38	36 25	186 39	93 79							42 82	154 28	845 91
Stores	133 86												133 86
Equipment	565 64	75 92	317 92	115 65					3 00		20 70		1,098 83
Repairs	956 83	103 60	5 40		119 79	84 50					3 42	149 63	1,423 17
Towage		25 00	220 00										245 00
Contingencies					86 00	5 75			22 50			184 25	298 50
Totals	2,681 36	685 41	1,211 16	707 78	287 89	170 25	80 60	86 40	337 40		724 44	1,508 41	8,481 10
Working expenses	1,724 53	581 81	1,205 76	707 78	168 10	85 75	80 60	86 40	337 40		721 02	1,358 78	7,057 93
Repairs, ordinary	956 83	103 60	5 40		119 79	84 50					3 42	149 63	1,423 17
Repairs, extraordinary													
Totals	2,681 36	685 41	1,211 16	707 78	287 89	170 25	80 60	86 40	337 40		724 44	1,508 41	8,481 10

BRITISH COLUMBIA.

DREDGING.

This service is possibly the most important of the department on this coast. assimilates with the harbour and river appropriations where there is a special grant f those services. It embraces, when not chargeable to such special appropriations, t services of the hydraulic dredge *King Edward,* dipper dredge *Mud Lark*, with t steam tender and scows, dredge *Nakusp,* on the Arrow lakes, Columbia river, and sna boat *Samson,* aggregating an expenditure of nearly $5,000 per month.

This would represent approximately $60,000 annually for this service, which wi be found to agree with the tabulated statement attached of the cost of the differe dredges for the year, month and day, based on the returns for the past twelve month

The expenditure in connection with the above service is as follows:—

Victoria Harbour	$ 3,999 60
Dredge *King Edward*	17,541 85
" *Mud Lark*	4,767 87
Snag boat *Samson*	8,281 28
Total	$34,590 60

The above expenditure may be classified as follows:—

Dredging Victoria Harbour.

Wages	$2,416 78	
Provisiones	650 21	
Material	456 35	
Coal	440 62	
Water	8 00	
Tug hire	20 00	
Contingencies	7 64	
		$ 3,999 60

Dredge 'King Edward.'

Wages	7,287 10	
Provisions	2,602 01	
Material	2,573 18	
Coal	4,986 46	
Water	32 19	
Contingencies	60 91	
		17,541 85

Dredge 'Mud Lark.'

Wages	2,830 79	
Provisions	649 71	
Material	383 00	
Coal	896 37	
Contingencies	8 00	
		4,767 87

Snag Boat 'Samson.'

Wages	$5,650 00	
Provisions	1,103 00	
Material	616 10	
Fuel	825 70	
Water	58 22	
Contingencies	28 26	
		8,281 28
		$34,590 60

DREDGE REPAIRS.

he expenditure on this service represents ordinary and extraordinary repairs to dges *King Edward* and *Mud Lark,* and snag boat *Samson,* the former repre- the work of repairs done by the crews and engineers, and the latter those ng outside assistance and beyond the scope of the ordinary crews.

has already been represented that the dredge *Mud Lark* has about reached her f life, and the repairs are out of proportion to her value. The *Samson* is equally and a renewal of the dredging plant, together with a new tug and hopper scows, on be required in order to continue the service with any degree of economy and cy.

e following is the expenditure incurred for repairs on the different boats for the ding June 30, 1903:—

pairs *King Edward*—		
Ordinary	$ 503 87	
Extraordinary	1,261 96	
		$1,765 83
pairs snag boat—		
Ordinary	$ 165 76	
		165 76
pairs *Mud Lark*—		
Ordinary	$ 411 98	
Extraordinary	2,653 86	
		3,065 84
Total		$4,997 43

STATEMENT showing expenses of the different dredges in British Columbia for the twel months ending February 28th 1903, and cost per working day in wages, fuel a supplies.

DREDGE 'KING EDWARD', (18 MEN).

Month.	Wages.	Fuel.	Stores and Provisions.	Total.
1902.	$ cts.	$ cts.	$ cts.	$ c
March	938 54	24 50	552 92	1,515 9
April	955 16	607 75	972 14	2,535 0
May	911 42	135 00	1,270 85	3,347 2
June	1,029 94			
July	951 76	737 43	506 10	2,195 2
August	1,025 00	703 50	826 86	3,555 3
September	1,015 16	132 00	256 61	1,403 7
October	1,024 67	746 02	834 54	2,605 2
November	1,023 00	1,380 54	1,430 70	4,779 2
December	995 00			
1903.				
January	992 74		657 99	1,650 7
February	982 14	1,119 00	844 65	2,945 7
Totals	11,844 53	5,535 74	8,153 36	25,533 6

Average cost per month :—

Wages	$ 937 05
Fuel	461 31
Stores and provisions	679 45
Total	$2,127 80

Average cost per working day—312 per year :—

Wages	$ 37 96
Fuel	17 74
Stores and provisions	26 13
Total	$ 81 84

DREDGE 'MUD LARK' (14 MEN).

Month.	Wages.	Fuel.	Stores and Provisions.	Total.
1902.	$ cts.	$ cts.	$ cts.	$ cts.
ary	736 25	42 37	186 99	965 61
	722 50		128 17	850 73
	720 34	261 00	528 45	1,509 79
	707 90	192 50	554 97	2,247 70
	792 33			
	745 00	65 00	236 82	1,046 82
t	730 00	137 50	430 95	1,298 45
nber	855 00		223 33	1,078 33
er	840 50	260 55	246 95	1,348 00
nber	789 66		341 54	1,131 20
ber	780 00	440 62	563 39	1,784 01
1903.				
ry	780 00		490 07	1,270 07
Totals	9,199 48	1,399 54	3,931 63	14,530 71

erage cost per month :—

Wages	$ 766 62
Fuel	1,161 60
Stores and provisions	327 64
Total	1,210 89

erage cost per working day—312 per year :—

Wages	$ 29 49
Fuel	4 49
Stores and provisions	12 60
Total	46 57

SNAG BOAT 'SAMSON' (9 MEN).

Month.	Wages.	Fuel.	Stores and Provisions.	Total.
1902.	$ cts.	$ cts.	$ cts.	$ cts
March	555 00	9 00	178 76	742 7
April	565 00	70 50	159 74	795 2
May	565 00	72 00	380 57	1,579 9
June	562 00			
July	565 00		315 07	880 0
August	565 00	311 80	212 03	1,078 8
September	565 00	32 50	123 63	721 1
October	565 00	32 50	248 26	845 7
November	565 00	143 50	292 56	1,566 0
December	565 00			
1903.				
January	565 00	48 75	136 20	749 9
February	565 00	62 75	175 07	802 8
Totals	6,767 33	773 30	2,221 89	9,762 5

Average cost per month :—

Wages	$563 94
Fuel	64 44
Stores and provisions	185 16
Total	873 54

Average cost per working day—312 per year,—

Wages	$21 69
Fuel	2 48
Stores and provisions	7 02
Total	31 29

Summary of Annual Expenses of the different Dredges.

Dredge *King Edward*	$25,533 63
" *Mud Lark*	14,530 71
Snag boat *Samson*	9,762 52
Dredge *Nakusp,* in narrows between Arrow lakes, Columbia river, assuming cost same as *Mud Lark,* or $1,210.89 per month for 8 months per year	9,689 12
Total	$59,513 98

IAL PAPER No. 19

DRY DOCKS.

Dominion government owns and operates three dry docks, viz., the Lorne dry Lévis, in the province of Quebec; the Kingston dry dock at Kingston, in the of Ontario; and the Esquimalt dry dock at Esquimalt, near the city of Vic- British Columbia.

LÉVIS DRY DOCK.

ng the fiscal year 1902-03 the electric arc lamp posts around the dock have all wed with movable iron posts, provided with long arms and pulleys to allow the being lowered to the bottom of the dock. The government road leading to the ferry wharf has been provided with incandescent lamps, as well as all the used in connection with the dock. The current is furnished under contract Canadian Electric Light Company, which derive their power from the Chau- s.

dock has been maintained in an efficient manner with the ordinary minor During the fiscal year the dock accommodated nine vessels of a total tonnage gross tons and was occupied during 303 days.

expenditure for the fiscal year was:—

Staff, maintenance and repairs	$13,847 26
Electric light installation	3,254 75
	$17,102 01

ESQUIMALT DRY DOCK.

ng the fiscal year the dock was occupied 211 days by 25 vessels, aggregating s, and the dues collected for the above services amounted to $13,668.91.

only new work done at this establishment during the year was a complete over the caisson chamber made of 12 by 12-inch joists placed 4 feet apart, concrete beds made around the coping of the chamber, and the whole covered inch planking, and new cast iron beds fitted under No. 1 boiler.

dock has been maintained in excellent working condition by the ordinary the pumping machinery, the steam boilers and the caisson; the outside dock e been painted, the caisson chamber and pump wells were cleaned, and all nery generally overhauled.

xpenditure during the fiscal year 1902-03 was:—

Staff	$10,237 42
Maintenance and repairs	3,021 10
	$13,258 52

KINGSTON DRY DOCK.

g the fiscal year 1902-03 the dock was occupied 123 days by 48 vessels aggre- 907 gross tons.

ock has been kept in excellent working condition with the ordinary care to ng machinery and minor repairs.

xpenditure for the fiscal year was:—

Staff	$2,995 00
Maintenance and repairs	1,995 27
	$4,990 27

RIVER DU LIEVRE LOCK.

ock is situated at Poupore, on the River du Lievre, 12 miles above Bucking- e county of Labelle. It was built to overcome the difficulties of navigating

the little rapid at that place, thus rendering the river navigable at all times of season for a distance of 19½ miles to the Long rapid. The lock was completed in 18 at total cost of $233,658.65.

During the last fiscal year the lock was kept in good working order with the ord ary maintenance and small repairs.

In the month of September, 1902, a new cast iron valve was put in the upper g to replace the one broken since the previous spring. In June last, two valves brok during the winter were also renewed.

The total cost of this work during the fiscal year 1902-03 was:—

Maintenance	$ 945 11
Repairs	520 70
	$1,465 81

YAMASKA LOCK AND DAM.

This river takes its rise in the township of Bolton, in the county of Brome. forms an outlet for several large lakes, and has a course of about 90 miles. It flo through the counties of Bome, Missisquoi, Rouville, Bagot and St Hyacinthe, Richel and Yamaska, and empties into the head of Lake St. Peter on its southern side, 8 mi below Sorel.

A contract for the construction of a lift dock and dam at Ile à Cardin, one mile a three-quarters below the village of St. Michel de Yamaska, and about four and a h miles from the mouth of the river, was entered into in 1881. This work was co pleted in 1886. It gives a rise of 5¾ feet.

By the construction of these works, the river has been rendered navigable for v sels of moderate draught up to St. Aimé, a distance of 20 miles.

Materials were purchased to repair the approaches of the dam.

Stone ballast was put in the dam where necessary.

The total amount expended during the year is $2,900.50, as follows:—

Repairs	$2,276 54
Staff and maintenance	623 96
	$2,900 50

ST. ANDREW'S RAPID, LOCK AND DAM.

Red River, Man.

The progress made by the contractors for this work has been very unsatisfacto and very little has been accomplished.

The work done has consisted of the excavation of 32,000 cubic yards of earth fr the lock-pit and upper canal entrance, and the excavation of 3,075 cubic yards of r from the lock-pit.

The earth excavation was moved mostly by steam shovel during the summer 1902. Rock excavation was commenced in February, 1903, and carried on until Ju 30, 1903, with the exception of the period from April 10 to June 15, caused by flooding of the lock-pit on the former date by the spring freshets.

During the winter of 1902-3 4,900 cubic yards of sand for concrete, and 200,(feet B.M. of square timber for cribwork, were delivered on the site of the work.

Soundings over the site of the dam and lower entrance have been taken during winter, and a complete set of borings, for rock surface at close intervals, by the wa jet method, are at present being made.

The expenditure for the fiscal year 1902-3 was $62,852.84.

PAPER No. 19

SLIDES AND BOOMS.

ominion Government owns and operates slides and boom works, built to
ne passage of square timber, round logs, flatted and dimension timber, &c.,
er Ottawa and tributaries, on the lower 40 miles or so of the St. Maurice,
Trent and Newcastle district, between Fenelon Falls and Heeley's Falls.
subjoined reports, the superintending engineers of these river works, Messrs.
ıy, F. X. Thos. Berlinguet and S. Clegg, give particulars relative to the con-
mprovements and repairs carried out under their supervision on government
ıs, piers, dams, streams, buildings, &c., during the fiscal year, the expenditure
r staff, maintenance, improvements, &c., the quantities of the various de-
of timber that pass through their works, and other information of general
l utility to lumbermen and the public at large.

REPORT ON THE OTTAWA RIVER WORKS.

(By G. P. Brophy, superintending engineer.)

OTTAWA, September 26, 1903.

EUR, Esq.,
ting Chief Engineer,
Public Works of Canada.

Pursuant to instructions received by me in your communication of June 29
the hononur to submit the following report on the works under my charge
ıwa and tributary rivers, for the fiscal year ended June 30, 1903.
he passage of timber and logs in the season of 1902, the customary examina-
foundations of the river works was made at the time of low water, and the
epairs commenced and continued during the winter months, preparatory to
g of navigation in the spring of 1903.
works may be described as follows:—

REPAIRS TO STATIONS ON THE OTTAWA RIVER (MAIN STREAM).

Chaudière or Hull.—At this station the sides and bottom of upper slide,
, were patched with plank and timbers; loose planks were secured by spikes
gs one were replaced. New planking was placed on tops of guide booms at
the slide, and some of the timbers in boom were renewed. The booms were
trengthened by new cross-fenders or cap pieces and screw bolts. At the
a large jam of logs and timber was removed at the front of the waste gate.
ecome lodged against the stoplogs, and prevented them from being raised or
regulate the flow of water in the slide.

Chaudière or Ottawa.—In the latter part of the summer of 1902 some repairs
rary character had to be made to the lower slides in order to pass the timber
ed at this station then. At the foot of the third slide a portion of the floor-
noved and some of the cross sills, which were broken, were spliced. At the
e fourth slide a small dam was built to back the water into the slide, while
of loose stone was removed from the basin between the third and fourth
ter the timber for the season had cleared this station, a start was made at
y work of repair. The basin between the second and third slides was filled
forming one continuous descent from the basin at the head of
and to the foot of the third slide. The old entrance to the third slide was
o feet, a pier 96 feet long, 12 feet wide, with an average height of 5 feet was
e bottom of the basin. This pier supported the cross sills of the slide at
le the ends were supported by timbers 6 by 10 inches, spiqed longitudinally
piers. The bottom of the third slide was overhauled throughout its length,

150 feet. Broken sills were renewed, the foundations were blocked to proper grad where sagged, and the flooring renewed. The pier forming the north side of the thir slide was rebuilt. It is 160 feet long, 9 feet wide and 6 feet high. The glance und Chaudière bridge was raised by placing two additional timbers 10½ by 12 inches by 2 feet between upright steel posts of the bridge. The guide boom at the head of th second slide was overhauled, new timbers, top planking, fenders, guy braces and roc bolts were furnished and placed in proper position. The top of the apron at th entrance bulk-head was covered with 3-inch birch plank, 12 inches wide and 16 fe long. At the entrance to the slide two boom piers were rebuilt from low water mar Each pier is 13 feet long, 10 feet wide and 7 feet high. They are planked with 3-inc material in front and at both ends. New stop logs were provided for the differe bulk-heads, and the hoisting gear and frames were repaired. The general storehouse sheds, &c., were kept in an efficient state of repair during the year.

Chats.—The only expenditure for repairs at this station was for a supply of timb and spikes for renewal of damaged portions of glance in the pier in the canal leading the slide. The labour was performed by the slide master and his assistants during th summer months.

Cheneaux.—At this place two capstans were provided to operate the gaps in th booms. They are constructed of wood, with iron spindles and mountings; are 4 feet length by 2 feet in diameter, and are supplied with the necessary levers to work the

Calumet.—The six-stick guide boom at the foot of Long Slide was taken apa and rebuilt. Three lengths, each 219 feet, were replaced with new timbers. The o screw bolts were repaired and used again. At the entrance to the Long Slide sever of the cross-sills were broken. The floor was removed, new sills inserted in place those damaged, and the planking relaid. The planking in the bottoms of the differe slides was repaired where defective. A supply of timber suitable for repairs to th booms and piers was purchased and held in readiness in cases of emergency.

Des Joachims.—At weak places in the guide boom on the north side, at the entran to the slide, extra timbers were set forming splices to stiffen the structure. The mem bers of the boom were bound together by screw bolts, clamps and cross-fenders, whi the top was covered with 3-inch plank. Two old piers were repaired, one above th entrance bulkhead and the other in the basin at the head of the slide. Upright timber held in position by cross-sticks, were placed in front of the piers, and to these we spiked timbers to form the face. The boom at the entrance bulkhead was repaired, fi new timbers having been added, while the chains, clevises, &c., were adjusted and r newed where defects had occurred.

Rocher Capitaine.—In the rapids at Rocher Capitaine several obstructions, inclu ing 'Sickle Rock,' were removed. These proved a serous inconvenience to raftsme for they were not only a danger to passing timber, but also caused jams of logs form on them, and thus necessitated the rivermen to steer wide of their proper cour to avoid the blockade, and consequently the cribs were sometimes carried out into mo dangerous portions of the rapids. Since this work has been completed the raftsmen a enabled to pass their timber with comparatively little danger, as they can now h the shore, enter the rapids at the proper place, and avoid being carried out into th main chute.

TRIBUTARIES OF THE OTTAWA.

Gatineau River.—The chains, joint links and clevises of the main boom we repaired throughout the season of navigation. New timbers were placed where the o ones were unsuitable, and loose sections were bound by additional screw bolts and clam irons. Some of the old piers were strengthened by encircling them with chains, whic being tightened, bound the bodies together.

A large pier near the mouth of the new channel was rebuilt from low water line. is 38 feet long by 30 feet wide at top, the height being 12 feet. The front is covere

L PAPER No. 19

h sheathing, and has á batter of 1 in 1. The corners are supplied with fen- and in the central portion a heavy chain was secured, to which the booms are At the upper end of the Government Reserve, on the south side of the river, f the bank, forming the roadway along the reserve, had become washed out face water running off adjacent property. To prevent further damage to the rib 60 feet in length, 12 feet in width, and 9 feet in height, was built and . The top forms part of the roadway, and a culvert was made to carry the ter through the pier into the river. The bridge over the new canal, 52 feet covered with 3-inch hemlock plank 15 feet long, and the approaches for a dis- feet on each side (making a total of 100 lineal feet), were covered with the of material. The bottom stringers of this bridge were stiffened by bolting the sides of the timbers. The top members of the truss were renewed, two nches by 13 inches by 24 feet being used for this purpose. The floor of the r the old canal was covered, for a distance of 40 feet, with 3-inch hemlock eet in length.

waska River.—At the mouth of the river the chains and fastenings of the boom were examined and repaired. The upper portion of a boom pier was his is 18 feet by 20 feet at water line, 15 feet by 18 feet at top, 7 feet high, plied with the usual fenders and mooring chains. At *Arnprior Slide* the ns were spliced with new timbers. The tops were sheathed with pine plank, nd pieces were placed at regular intervals to hold the timbers together. Two apron below the dam were renewed and the sides of the crab frame on the aving become unserviceable were replaced. At *Flat Rapids* the long dam on side of the river was braced by posts set in rear, and a portion of the plank- face was repaired where damaged. At the sorting boom at *Upper end of* lake, three of the piers were repaired. The top timbers had become so much at they had to be replaced by new ones. Fenders were placed at the corners s to bind them until repairs of a more permanent character are undertaken. *alls Station*, to prevent the wing pier between the slide bulkhead and shore ding, vertical pieces of timber were set at the front and rear, held together by 1½ inch in diameter. A pier 24 feet square at the water surface and 16 feet at top and 7 feet high, was rebuilt at the head of the slide. The slide house n a state of repair, and during the summer months a quantity of plank was slide as required. At *Duck Rapids* the sheathing of the dam on the north atched, and along the crest 4-inch maple plank was laid to protect the ends of ng. At *Chain Rapids*, bolts and spikes were provided for the angle guards checks, while the hoisting crabs were adjusted.

of the repairs on the Madawaska were executed by the slide masters at the tations, with the staff of men employed to operate the works during the ason.

nge River.—At *High Falls* on this stream the foundations of the slide at the site the old blacksmith shop, for a distance of 150 feet, were repaired. New cross-ties and upright posts were put in and the structure was secured to solid ains, eye-rods and bolts. At *Big Rock* the foundation cribwork having set- w posts, ranging (in length) from 6 feet to 24 feet, were set after the super- ad been jacked to proper position. Loose rocks which had fallen from the and sawlogs were removed from the rear of the foundation cribwork, to pre- e pressure at this place. About 15,000 feet B.M. 3-inch oak and maple plank in the sides and bottom of the slide, and 114 posts, 32 cross sills and 150 e replaced. The top of the bulkhead was planked and a number of missing were laid. Near the entrance to the slide, a snubbing pier 10 feet by 12 feet high, was rebuilt. The corners of the piers were patched with hardwood ere worn by the booms and logs. The top of guide booms were planked essary and the chains anl clevises renewed where found unserviceable. The e hill along the slide was brushed to give the watchman at the signal station

a better view of the slide. The fence along the government reserve was repaired by stringing new wire on posts.

At *Retaining Boom, above Coulonge village,* a pier 17 feet by 24 feet was patched. A quantity of the stone filling was removed and the front and back rebuilt. To hold the pier together, three vertical timbers were placed on either side and connected with screw bolts passing through the body of the pier.

Black River.—The sides and bottom of High Falls slide on this river were repaired by spiking the planks and timber where the old material was worn too thin. Thirty- three bars of iron ¼ inch thick by 4, 5 and 6 inches wide, were laid on the sides and bottom to protect the wood surface from wearing too rapidly. All the work of repair were performed by the slide master and his men during the season of driving operations.

Petewawa River—At *Second Chute Slide* some minor repairs were made to the posts, sills, braces and planking of the slide, the labour being performed by the ordinary staff during running season. At *Third Chute,* a portion of the main governing dam broke away in May, 1902, and as it could not be repaired to advantage at that season of the year the drives had to be passed over the chute—temporary guide booms, feeding gaps, &c., having been provided for this purpose. The different drives were put through expeditiously, without damage resulting to logs and timber, so it was decided to improve the channel by blasting rock obstruction, building certain side piers and abandoning the slide. The work has been carried out, four pier dams having been built. Of the two upper ones, that on the south side is 82 feet long, 8 feet wide, and 13 feet high at outer end, decreasing in height at the shore end to 4 feet, and the one on the north side, 174 feet long, 8 feet wid, 7 feet high at the upper end, and 11 feet at lower end. These two are situated immediately above the C.P.R. bridge, and are for the purpose of guiding logs between the stone piers of the bridge. The other two piers are situated a short distance below this bridge; the dimensions of the one on the north side are 96 feet long in front, 75 feet in rear, 10 feet wide, with an average height of 11 feet, and of the other 82 feet long, 6 feet wide, and 4 feet high. These piers are sheeted on the face with 3-inch and 4-inch planks set vertically, and at places where the wear is greatest an extra covering of plank was laid horizontally.

A number of rocks were blasted in the rapids, and at the south end of the remaining section of the main dam a pier, 13 feet by 16 feet by 10 feet high, was built to snub the guide boom and feeding platform. During the past summer all the drives on the Petewawa were passed through the new channel, and the improvements were considered a complete success, as a large saving to the lumbermen, in time, was effected.

At *Crooked Chute* the main guide boom, at the head of the slide, was strengthened by placing a new single stick boom of 12 sticks, joined by ¾-inch chains, at the rear of the old boom, and secured to it by chains and cross-pieces. A rock bolt was set at the upper end to serve as a boom anchor, and two snubbing posts were placed in the two support piers. A section of boom 50 feet in length was sheeted with 5-inch plank to form a feeding platform at the head of the slide. The corner of the entrance pier was covered with iron bars ¼ inch by 5 inches. At the outlet of the slide, iron bars ¼ inch thick were placed on the sides of the cribwork to prevent wear, and throughout the length of the slide the sheeting, posts and braces were repaired where necessary.

Dumoine River.—At High Falls the long slide was patched in many places along the whole length if the structure. The sheeting in the bottom was renewed for a distance of 275 feet in length at a point near the slide outlet. At several places the upper portion of the slide had sagged and had to be raised to proper grade. Fifty-six bars of flat iron ¼-inch thick were laid in the bottom, and on the sides at the curves in the slide, to preserve the sheeting as much as possible from abrasion. Some 2,500 lineal feet of round timber were laid in the bottom of the slide, in the corners, to confine the water to the centre, and also to stiffen the superstructure. Sills, posts, braces and sheeting at various places were renewed and patched where most urgently needed.

PAPER No. 19

ves of 1902 were generally successful in reaching their destination, and protracted drought of the early portion of the season of 1903 threatened elays to the raftsmen's operations, timely rainfalls in June came to their

owing statement, compiled from information furnished by the Collector of the department, shows the quantity of the various descriptions of timber, ese works, and the revenue accrued thereon for the fiscal year ended June

	Pieces.
are timber	18,442
-logs	4,064,607
m and dimension timber	93,045
ar	85,125
lroad ties	606,938
ce posts	247,154
Total	5,115,311

743¼ cords pulp wood and 3 scows.
accrued on the above, $46,337.38.
itting the above,

I have the honour to be, sir,
Your obedient servant,

GEO. P. BROPHY,
Superintending Engineer, Ottawa River Works.

STATEMENT showing Expenditure for Repairs to Works on Ottawa River and Tributaries for fiscal year ended 30th June, 1903.

Name of Works.	Province.	Electoral District.	Expenditure from July 1, to Dec. 31 1902.	Expenditure from Jan. 1, to June 30, 1903.	Expenditure from July 1, 1902, to
			$ cts.	$ cts.	$
Ottawa River, Main Stream.					
North Chaudière Station.	Quebec	District of Wright	97 48	714 15	811
South " "	Ontario	City of Ottawa	1,293 00	2,358 79	3,651
Chats " "	"	North Riding of Co. Lanark	... ...	65 60	65
Cheneaux "	"	South Riding of Co. Renfrew	... ...	15 53	15
Calumet "	Quebec	County of Pontiac	... ...	650 51	650
Joachim "	"	" "	... ...	126 15	126
Rocher Capitaine "	"	" "	394 90	... ...	394
			1,785 38	3,930 73	5,716
Tributaries of Ottawa River.					
Gatineau River	"	District of Wright	1,159 36	1,225 64	2,385
Madawaska "	Ontario	South Riding Co. of Renfrew	183 63	1,200 84	1,384
Coulonge "	Quebec	County of Pontiac	704 26	1,475 13	2,179
Black "	"	" "	29 45	106 45	135
Petewawa "	Ontario	N. Riding Co. Renfrew and Nipissing	1,217 24	579 53	1,796
Dumoine "	Quebec	County of Pontiac	... ...	1,005 79	1,005
			3,293 94	5,593 38	8,887
Roadway and Bridge approaches between Ottawa and Hull.					
Chaudière Bridge	Ontario	City of Ottawa	127 52	91 73	219
Union Bridge	Ontario and Quebec	City of Ottawa and District of Wright	90 10	149 72	239
Hull Slide	Quebec	District of Wright	12 50	18 00	30
Roadway and Bridge approaches between Ottawa and Hull	Quebec	City of Ottawa and District of Wright	152 38	156 43	308
			382 50	415 88	798
Joachim Bridge approaches	Quebec	County of Pontiac	... ...	... ...	...
			1,343 47	... ...	1,343
Laurier Bridge approaches.	Ontario	City of Ottawa	... ...	... ...	...
			... ...	3,503 01	3,503
		Grand total	... ...	... ...	20,249

D. SCOTT,
Accountant.

OTTAWA, September 26, 1903.

REPORT ON THE ST. MAURICE RIVER WORKS.

(By F. X. Thos. Berlinguet, superintending engineer.)

THREE RIVERS, November 21, 1903.

. LAFLEUR, Esq.,
g Chief Engineer,
ublic Works of Canada, Ottawa.

I have the honour to submit the following report on the works under my the St. Maurice river, and certain of its tributaries, for the fiscal year ended 903.

e low water season of 1902, after the drives had passed, the foundations of s river structures were examined and a commencement made of the neces- s and improvements. The work was continued during the close season of and early spring months, in order that everything would be in readiness ening of navigation of 1903. These works may be described as follows:—

e à Trudel Booms.—On the 40th mile of the St. Maurice river, 1,412 lineal oms, also three mooring piers, were examined and put in good condition for g season.

e Madeleine Booms.—On the 39th mile, 2,588 lineal feet of booms. Stone s put in the piers where necessary. A number of boom chains were supplied.

cques des Piles Booms.—On the 38th mile from the outlet; 2,176 lineal feet ply booms, also 7 mooring piers were put in good condition. A number of ns were supplied. Stone ballast was put in the piers where necessary, and epairs were made to boats, scows, station house and fences.

s Piles Booms.—On the 35th mile on the St. Maurice; 3,297 lineal feet of ns, 1,109 feet of 4-ply booms, and 202 feet of 5-ply booms were put in good A number of boom chains were supplied. Stone ballast was put in the nine re necessary.

e à Paquin Booms.—On the 33rd mile; 4,238 lineal feet of 5 and 8-ply booms hed with 3-inch deal. Two jam piers measuring 50 by 40 by 38 feet, marked nd 11 on plan submitted.

e des Hêtres Booms.—On the 26th mile; 600 lineal feet of 2 and 3-ply booms n good condition, and one anchor pier was raised few feet and stone-filled.

nigan Upper Bay Booms.—4,200 lineal feet of five-ply booms were sheathed n good condition. A number of boom chains were supplied. Three piers d and stone filled.

nigan Slide.—A section of the bottom and sides of the slide were repaired ng the worn out timber and planking with new material, the apron faced wood, and the projecting spikes in the bottom and sides of the slide were nk.

x Tourtes Booms.—On the 17th mile, 11,805 lineal feet of one to seven-ply re put in good condition, and were left stretched for the winter to close the annel above the island and the western channel below the said island. One vas raised and stone-filled.

ux Corneilles, Eastern Booms.—On the 3rd mile, 1,246 lineal feet of 8-ply 14 feet of six-ply booms, 294 feet of five-ply booms, 1,933 feet of four-ply d 1,005 feet of two-ply booms were put in good condition, also 25 piers were corners and on faces, where damaged. Posts were renewed where worn out ed.

Cap aux Corneilles, Western Booms, Three Rivers Sluice Gates.—On the 2n mile, 108 lineal feet of seven-ply booms, 777 feet of six-ply booms, and 402 feet of fou ply booms, also seven mooring piers were examined and put in good condition.

Vermilion River.—This river flows from the north-west and discharges into th St.Maurice at a point 121½ miles above its mouth. The dam at the head of the Iroquoi Falls was rebuilt in 24 feet of water, also 400 feet of 3-ply booms were renewed.

The drives of 1902 were fairly successful in reaching their destination, and las spring a very favourable pitch of water prevailed for the early movement of timber but shortly after the freshets had run off the river drivers had to contend with lo water conditions, so much so that many of the logs taken from remote berths on som of the tributaries did not get out. The following statement, compiled from informatio furnished by the Collector of Revenue in your department, shows the quantity of th various descriptions of timber that passed these works, and the revenue accrued thereo during the season 1902:—

	Pieces.
Saw-logs	1,002 187
Small logs	1,954,707
Flat and round timber	6,350
Cedar	418
Square timber	176
Total	2,963,838

And 140 cords pulp wood.
Revenue accrued and collected, $29,232.33.

I have the honour to be, sir,
Your obedient servant,
F. X. T. BERLINGUET,
Superintending Engineer, St. Maurice River Works.

REPORT ON THE TRENT AND NEWCASTLE DISTRICT WORKS.

PETERBOROUGH, September 29, 1903.

EUGÈNE D. LAFLEUR, Esq.,
Acting Chief Engineer,
Dept. of Public Works, Ottawa.

SIR,—In compliance with your request in your letter of June 29, 1903, I have th honour to submit the following report on the works under my charge on the Trent riv and the waters tributary to it for the year ending June 30, 1903.

These works extend from the Bay of Quinté, on the south, to Balsam lake on th north.

Healey's Falls.—The glance pier was rebuilt from water line and the booms we repaired. A new platform was put on the dam with cedar plank covering. A ne track was placed for moving the stoplog winches.

Hastings.—The booms and the slide were repaired.

Little Lake Peterboro'.—The booms here are about ½ a mile long, with four anch piers. The boom was taken off in the fall and replaced in the spring, overhauled an put in good order.

atchawannoe Lake.—The boom dividing this lake, making a log and boat channel, Young's Point to Lakefield, a distance of 4½ miles, was overhauled and put in good

urleigh Falls.—The work of blasting out the rock and improving the log channel as completed as far as possible. The log channel was greatly improved, and no e was experienced with the logs at that point during the season.

ovesick Lake.—The boom here is about ½ a mile long; it was overhauled and put ition.

eer Bay.—The boom at this place was put in position and some minor repairs

uckhorn.—The side pier at the foot of the timber slide was undermined by the and logs. This was repaired by putting vertical sheeting on the inside of the id refilling with stone. The nose of the piers on the slide were rebuilt and new g put on.

nelon Falls.—The booms here were overhauled and put in good order. Some repairs were made to the slide.

ugog River, Lindsay.—The work of dredging in the Scugog river, Lindsay, was ted. The work has greatly improved the channel for both logs and boats.

I have the honour to be, sir,

Your obedient servant,

S. CLEGG,

Superintendent.

BRIDGES AND ROADS.

It may be stated that, in the older provinces of the Dominion, the federal gove ment has confined itself as a rule to take under its exclusive control and make pro sion towards the construction and maintenance of important interprovincial r bridges and bridges required across waterways.

In the sparsely settled districts of the North-west Territories, the government Canada has undertaken to provide for the erection and maintenance of ordinary r bridges over large streams; bridges that are urgently needed to afford uninterrup communication through trails and highways of national importance, which neither municipalities to be more immediately benefited by the structures, nor the territo authorities most directly concerned, could be expected to erect and maintain at th sole expense.

During the last fiscal year works have been executed on the following bridges:—

OTTAWA BRIDGES.

BRIDGES AND APPROACHES BETWEEN OTTAWA AND HULL.

South Channel Slide and Hydraulic Channel Bridge.—The roadway of this bri was scraped frequently during the year, the gratings and water pipes were clea when found necessary. At the approach on Middle street, a sidewalk was built on north side. It is supported by iron beams and brackets and fitted with guard fe of the same design as that on other parts of the bridge. The length of the sidewall 45 feet and width 5 feet. The surface is finished in granolithic laid on concrete s ported by arched plates in bottom.

Union Bridge.—A new covering of 3-inch pine planks was laid on the weste portion of the roadway between the street railway company's tracks and the sidew this portion being 12 feet in width and 230 feet in length. The sidewalks w patched, the iron gratings at the south end were repaired where broken and th frames properly levelled, and the roadbed was cleaned at different times when nec sary.

Hull Slide Bridge.—The roadway of this bridge was cleaned and the gratings w kept free from debris.

The Causeway leading to Hull was cleaned as required and the rubbish car off. The different gratings and 'Weeper' holes were examined and cleaned, and wheel guards, sidewalks and guard rails were kept in a state of repair throughout year. During the winter months surplus quantities of ice and snow were remo from the sidewalks and the roadbeds of the different bridges and causeway, for convenience of those having occasion to use these thoroughfares.

Laurier Bridge.—At the westerly approach of this bridge, after the surface at s grade was formed and thoroughly tamped and rolled, Nepean sandstone paving blo were laid on a bed of sand for a distance of about 600 feet in length, and an aver width of about 38 feet, and the joints on top well grouted with cement mortar. the easterly approach of the bridge, concrete sidewalks were laid on both sides fr the end of the bridge to Nicholas street, an average distance of about 265 feet.

ONTARIO AND QUEBEC.

Des Joachims Bridge.—In spring of 1902 when frost came out of the grou owing to unequal settlement of material in the fill, a section of retaining walls, both sides, for a distance of some 100 feet, bulged and finally collapsed. This appro had been built during winter, and it was impossible to prevent a certain amount of and snow from entering the work. Last October, when the water in the Ottawa

L PAPER No. 19-

tch, the repairs were completed in the following month. The damaged walls ved and rebuilt, care being taken to have a sure foundation and increased uard against failure of the work in the future.

eral places along the roadway filling was done on the surface to procure a led thoroughfare.

ge du Fort is on the north shore of the Ottawa river, in the county of) miles above the city of Ottawa.

s place an island divides the River Ottawa into two channels, called the south channels, the village of Portage du Fort is on the north shore of the nnel. In the fall of 1901, with contributions from the provinces of Quebec io, the department completed a steel bridge across the south channel. The r the north channel was then unsafe for traffic, and it being considered as art of the interprovincial bridge uniting the two provinces, the department also renew this bridge with a steel structure.

ne, 1903, a contract was entered into with Mr. Thomas Moran, of Arnprior, nstruction of two abutments and approaches. The work had not been com- the end of the fiscal year.

POND CREEK BRIDGE.

creek is an outlet to Leamy's lake, and flows into the Ottawa river, half a the mouth of the Gatineau river.

ovember 24, 1894, a contract was entered into for the construction of a feet long over all, and 20 feet wide over a creek, for a bulk sum of $2,490. ridge was completed and opened to traffic on May 1, 1895.

g the fiscal year 1902-03 the whole flooring and supports were renewed and rs made to the stone rip-rap abutments.

diture during the fiscal year, $1,130.52.

otal expenditure to June 30, 1903, is $5,066.79.

NORTH-WEST TERRITORIES.

ford Bridge.—The superstructure of this bridge was completed in the month 903, and opened to traffic. It is a very strong bridge of three spans, two of length, and the other of 156 feet. This superstructure has been placed on f the old bridge which collapsed in 1900. As stated in previous reports, the re should live for four years more, when railway communications will give tter opportunity of freighting the material necessary for replacing it. At e bridge is in perfect condition, at a very high level, and well protected eshets. It will require no alterations nor repairs, unless unforeseen acci- four more years, when it will be necessary to remove the old piers and build substructure.

xpenditure during the fiscal year was $21,848.97.

CEMENT LABORATORY,
DEPARTMENT OF PUBLIC WORKS, October 29, 1903.

LEUR, Esq.,
g Chief Engineer,
Department of Public Works.

I have the honour to inclose herewith the annual report of this branch of ment for the year ended June 30, 1903.

I am, sir,
Your obedient servant,
GEORGE E. PERLEY,
Engineer in charge.

Since June 30, 1902, all samples submitted to this branch have been fully test and reportedl upon, chiefly amongst them being, the cement supplied for the constru tion of the high level pier at Montreal east, the Montreal elevator, and also sand work at St. Andrews, North Manitoba.

Twenty-six tests were made for the Marine and Fisheries department for work the pier at Grand Traverse, and tests were made of cement for work at Father Po for the lighthouse.

Mr. S. M. McLay was appointed to this staff from the Marine department for struction in the method of mixing and using mortar and concrete for the work Grand Traverse, thus enabling him to take charge as inspector of the work.

Information was also given to the clerk of works of lighthouses on the upper lak with reference to quantities for concrete and means of depositing under water.

Information has also been given to the Departments of Railways and Canals a Militia.

In the tests of 'Star' brands of Portland cement for the Montreal elevator, t cement was rejected, it did not fill the requirements of the specification in the chem cal analysis, it was found to be under-burned and over-clayed, a sample of the reject cement was submitted to the chartered testers, Messrs. Booth, Garret and Blair, La bury and Spackman, of Philadelphia, S. B. Newburry, Sandusky, Ohio, School Science, Toronto, and McGill College, Montreal, the returns from these charte testers coincided with the results found in this laboratory.

A change was made in the chemical composition of the cement, and more thorou burning inaugurated, thus bringing the cement up to the requirements of the spe fication. This retarded the work for some time, but after the correction was made, officer of the department was sent to the cement works to take samples and forwa them to this laboratory for test purposes. It was found that something had to done to facilitate the testing so that the contractors might not be delayed. It w decided to try what steam and hot water would do in furthering quick retur briquettes were made, and after nine hours' exposure to the normal tmperature the laboratory they were placed in steam at 140° F. for three hours, at the end which time, they were immersed in water at the same temperature for twelve hou they were then tested and gave in the neat test a variation of about 146 pounds and the three to one about 34 pounds, compared with the straight seven day test, this w so marked that it was thoroughly reliable. The facilities of the laboratory were meagre that only a few samples could be treated as above at one time, not enough keep the work supplied, plans were designed for a large accelerated steam box with movable grating, allowing the briquettes to be placed in steam and at the end of t specified time the grating could be lowered into the water, thus immersing t briquettes.

This has proved so satisfactory that there were only three carloads held for t straight seven-day test out of sixty; the samples out of these carloads did not come to the average in the accelerated tests, but were satisfactory in the seven-day tests.

It is well to state that a check was kept on the said tests by also making one straight seven days of each sample submitted to the accelerated tests, and from t average difference of the two methods employed the variation before mentioned w found.

It has been decided to have crushing tests made of concrete blocks. A crushi machine has been ordered, and will be installed in the laboratory. The manufactu of concrete blocks has been started and will be carried on under various conditio both in the laboratory and at the elevator at Montreal. The rooms now occupied by t Militia Department over the laboratory have been secured, as the Militia Department to vacate them at the end of the present year. This will allow of the chemical secti of the laboratory being installed in one and the general office in the other, retaini the rooms on the lower floor for the mechanical portion, thus allowing a foundation be built for the crushing machine, and a stairway connecting with the rooms abo

AL PAPER No. 19

ngement will give better facilities for the chemical work, insuring against dampness, which have militated against accurate work up to the present.

ıly the staff of this branch was augmented by a second assistant, thus light- work to some extent, which has grown very much in the last few years, and ok for the use of cement is growing more rapidly. It is taking the place of ıd masonry, being more lasting than the first and cheaper than the last, and er results.

ebruary a trip of inspection of the cement laboratories of the United States osed by the Department. This was carried out. The principal laboratories York, Philadelphia, Washington, Pittsburgh, Toledo, Detroit, Sandusky and vere visited,. It was found that the methods adopted by the American Society Engineers was modern, concise and thorough. On the return to Ottawa a as made embracing the American Society's methods, gang moulds, moist l grips for testing machine were ordered. When everything is in order for node, a number of the machines which have become obselete can be removed, ore room to place the crushing machine. For this a foundation will have to from the rock, as the machine has a capacity of 300 tons, requiring a substan- lation.

mber of tests have been made for the Architect's branch, and general informa- been given it; also to the engineers of the department with reference to the uantities and general information as to mortars and concrete. A number of rs have been assisted in the same manner.

Secretary of the Department has been supplied with information as to the f manufactories in Canada and their yearly output. The same information given to the Belgian Consul by request.

HYDROGRAPHIC SURVEY.

ST. LAWRENCE SHIP CHANNEL.

ı July 1, 1902, to the late fall, the topography of both shores has been com- about a mile below Pointe Platon, and the soundings have been closed oppo- harf at Lotbinière.

he main triangulation points down to Pointe Platon have been marked on the ith cast iron posts, and all these stations but 16 have been observed from.

observations at these 16 stations could not be completed on account of the able weather that prevailed during last fall for alt-azimuth work.

ings between Stone Island and Point Platon have also been registered until r.

he department's request, Mr. Biggar, of the Department of the Interior, has onomical observations at Sorel and Three Rivers, and has furnished the exact ical points of station LX. (Three Rivers and V. (Sorel).

less to say that this information is of great value, and will enable to calcu- atitude and longitude of all main triangulation stations, church spires, light- c.

ng the winter all the members of the staff have been kept busy calculating triangulation points, reducing gaugings and soundings, and plotting the ion obtained during the summer.

This spring outdoor work was only begun on May 18, owing to the fact that th survey boat was not available.

From May 15 to June 30, 1903, the gauges were re-established at the different sta tions between Stone Island and Pointe Platon.

Between Three Rivers and Grondines few secondary points were observed, and al the stations between Grondines and Pointe Platin were re-flagged and observation begun.

On May 15, 1903, the houseboat *Lotbinière* and yacht *Marie* were also ordere down to Three Rivers to prepare for outdoor work.

From May 20 to June 29, 1903, the sounding party were kept busy laying soundin ranges at Lotbinière and preparing for work.

During this fiscal year the office staff has completed the plans (500 feet to 1 inch down to Grondines. The charts of the river for publication purposes were complete down to the head of Lake St. Peter, and those from Pointe du Lac to Champlain wer begun.

The preparation of the 'tableaux' showing the calculations of the main triangula tion and secondary points, geodetic co-ordinates of same, &c., were begun and gaug profiles completed up to date.

The total expenditure for the fiscal year was $29,829.62.

The following reports were received too late for insertion in their proper places:

QUEBEC.

BELŒIL (GUIDE PIERS).

Belœil is a post village in the county of Verchères, on the north side of th Richelieu river, 21 miles north-east of Montreal.

During the fiscal year 1902-03, the sum of $500 was paid to Mr. Tancrède Bien venue for damages to his property caused by the construction of guide piers and guar wall some years ago.

The amount was authorized to be paid by Order in Council No. 246230, in fu settlement of Mr. Bienvenue's claim of $2,000. The legal and other expenses in con nection with the claim amounted to $53, making a total of $553.

CAP DE LA MADELEINE.

Cap de la Madeleine is situated in the county of Champlain, on the River S Lawrence, 3 miles from Three Rivers.

During the fiscal year 1902-03, the sum of $841.02 was expended in repairs to th wharf at this place, the sheathing of the ice-breaker on the up-stream side was partl renewed, and the sloping face of the wharf was repaired.

CÔTEAU LANDING.

Côteau Landing, the chef-lieu of the county of Soulanges, is situated on the nort shore of the River St. Lawrence, at the foot of Lake St. Francis, 36 miles above Mon treal, and 2 miles from Côteau station, on the Grand Trunk railway.

During August, 1902, the sum of $213.48 was expended for materials purchased i

n with repairs carried out during May and June of the same year, to the harf at that place.

CÔTE STE. CATHERINE.

Ste. Catherine is a landing place situated on the south shore of the River St. , in the county of Laprairie, about 5 miles west of the village of Laprairie. public wharf there consists of a head-block of close-faced crib-work, 82 feet feet wide, laid parallel to the current, terminated at its upstream end by an er; the approach from the shore to the block is also of close-faced crib-work, ong by 18 feet wide. The outer face of the block stands in 6 feet at low water

ng June, 1903, the sum of $493.59 was expended to procure materials to repairs to the approach of the wharf, which had been damaged by the ice. ie spring.

KAMOURASKA.

ouraska, in the county of the same name, is on the south shore of the St. , 90 miles below Quebec.
ng the fiscal year 1902-03, the sum of $160.30 was paid in settlement of ac- nnected with the work of the previous year, and rendered too late for payment.

MURRAY BAY.

ay Bay, or Malbaie, is on the north shore of the St. Lawrence, in the county voix, 83 miles below Quebec. During the fiscal year 1902-03, trifling repairs e to the wharf, amounting to $224.86.

RUISSEAU LE BLANC.

seau LeBlanc is a small village on the northern coast of Baie des Chaleurs, in y of Bonaventure, the village is built near the mouth of the river, also called LeBlanc.
der to protect the entrance of the river and afford shelter for the fishing boats, cided to build a breakwater wharf on the west side of the mouth of the river, ntract was entered into on March 20, 1902, with Mr. John Burns, of Ottawa, nstruction.
work was completed in November the same year, at a cost of $21,077.29.
breakwater is built at right angles to the general line of shore for a distance et in a south-westerly direction, thence with a slight angle towards due south, distance of 125 feet, making the total length 500 feet, with a width of 20 feet he work is substantially built of close-faced timber, and round cross and longi- ies, filled with stone ballast and sheathed on the west side, outer end and for of 12 feet on the east side, with 6-inch hardwood planks. The top is planked 5-inch spruce planks.
outer end of the breakwater wharf stands in 7 feet at low water spring tides, e 8 feet. The top of the wharf is 7 feet 6 inches above high water spring tides.

ST. ZOTIQUE.

Zotique is situated on the north shore of Lake St. Francis, in the county of s, Quebec.

The landing pier at that place consists of a block 132 feet in length by 24 feet width; the approach is composed of 34 piers placed at intervals of 20 feet, and var from 8 to 12 feet in width.

During the month of August, 1902, the sum of $203.12 was expended in slight pairs to the pier.

In conclusion, I assure you that without the efficient and conscientious help re dered by my assistants it would have been impossible to handle the enormous busin connected with the works under the control of this branch of the service, and I take t opportunity of thanking them for the valuable services they have rendered.

EUGENE D. LAFLEUR,

Acting Chief Engineer.

APPENDIX TO PART IV

REPORT

ON THE

EL GRAIN ELEVATOR AND SHORE WHARF

IN

MONTREAL HARBOUR

BY

ARTHUR ST. LAURENT, C.E.

WORK DONE IN 1902.

OTTAWA, January 8, 1903.

—I have the honour to present herewith my report for the year ending Decem-1902, as engineer in charge of construction of the steel grain elevator and shore wharf, being built in section 15 of the Montreal harbour, by the Steel and Elevator Construction Company of Buffalo, N.Y., for the Board of Harnmissioners of Montreal.

ELEVATOR BUILDING.

April 16, 1902, after the approval of plans by the Honourable the Minister of Vorks, a contract was passed between the Harbour Commissioners of Montreal Steel Storage and Elevator Construction Company of Buffalo, N.Y., for the tion of a fireproof grain elevator of 1,000,000 bushels storage capacity, to be d by August 1, 1903; the contract being for an elevator building complete, with marine tower and all the machinery and millwright work contained necessary to place the entire structure in a complete and satisfactory operating , but not including the shipping conveyors nor galleries, which are to be pro- afterwards in connection with freight sheds on piers.

contract does not include the dust burning apparatus, in connection with the ecting system and sweepers specified to be arranged on various floors of main , the burning apparatus having been left to be determined later and to be convenient to elevator building.

track approaches and grading outside the building do not form part of the and is left to be done by the Harbour Commission.

price to be paid to the contractors for the work included in the contract, as tlined, is $606,600, and in clause 3 of the contract the following was inserted ommissioners with reference to monthly payments and the appointment of an in charge:—

the tenth day of each calendar month, 95 per cent of the value of the work the site and cost of materials on the ground, up to the first day of said month, ied by an expert in charge of the construction appointed by the Minister of Vorks, less any previous payments,' &c.

s stipulation was approved by the Honourable the Minister of Public Works, ed me in charge of this construction, in addition to my other duties in the ent.

GENERAL DESCRIPTION.

ore going into details as to the work done by the contractors since the begin- operations, it is desirable to give a short description, showing the character of ding and the principal features of its equipment.

elevator, which is located in the central portion of the harbour, on the shore tween the King Edward and Alexandra piers, will be fitted for receiving grain s and boats, and is intended to be provided with extensive conveyors for deliv- ain to ships, at their berths, alongside the adjoining piers.

structure will be entirely fireproof, with foundations and story under bins ted of concrete with imbedded steel rods.

Storage bins are constructed of steel plates and the cupola, above bins, c structural steel with concrete floors. The marine tower provided in front of the build ing is also of steel throughout, floored same as cupola.

Size of main building, on the ground, is 189 feet 3 inches long by 84 feet inches wide, by 225 feet high from foundation level, or 194 feet 6 inches high fro track floor to eaves of cupola.

Marine tower carrying the sliding marine leg, for unloading boats, is bui so that it can be made movable on four tracks in front of the elevator. It is 33 fe long, 28 feet wide and 150 feet high, and carries weighing scale for grain.

Storage compartments are circular bins, 36 in number, 85 feet in height, ar arranged in four rows of nine bins each, and rest on 45 concrete columns, in turn su ported on concrete piers and piling. The interstices and outer spaces between bi are also utilized for storage.

Capacities and number of the different bins is as follows, assuming, as show by experience, that the grain is compressed about 3 per cent of its original volume whe the bins are fully loaded:—

	Bushels.
36 cylindrical bins, 20 feet 3 inches in diameter, 85 feet high—	
Capacity each, 21,183 bushels	762,588
20 interstice bins, 85 feet high—	
Capacity each, 7,708 bushels	154,160
22 outside bins, 85 feet high—	
Capacity each, 3,280 bushels	72,160
4 garners on top floor—	
Capacity each, 1,600 bushels	6,400
4 scale hoppers on scale floor—	
Capacity each, 1,600 bushels	6,400
Total capacity	1,001,708

The grain business to be transacted in and through the elevator will be to unlo boats or cars, and to ship grain either direct to cars or to boats, either by direct spou or by means of shipping conveyors.

The elevator will contain four elevator legs, all of which will be equipped to recei grain from cars standing on two tracks, inside the building, or to be used as lofter le in elevating grain from marine tower. All legs can also be used when shipping transferring grain from any bin in house.

The arrangement of the floors below and above the bins is similar to that in t ordinary elevator.

In operation, the cars are hauled into the building in two sets of four cars eac and are unloaded with automatic shovels into four receiving hoppers under the track

As the grain passes from the cars into the hoppers it is taken by en less belt carriers from the hoppers to the top of the elevator, where it falls into t garners, thence into the scale hoppers and to the scales, where it is weighed. Gra coming by boat is first weighed in scales installed in the marine tower, so that the shi per does not lose sight of his grain before it enters the elevator.

From the scales, in the building, the grain drops through spouts, from which it taken by belt conveyors and handled longitudinally of the building and delivered in the proper bin.

If it is to be cleaned it falls through the bin to one of the cleaning legs, whi elevates it, thence it passes over the sieves of the cleaning machines, returns again the top of the house and down into a bin.

In providing power for the various processes, the plan is followed of utilizi individual electric motors, in order to obtain greater economy in power distribution.

vision is made for two shipping conveyors to be run from main elevator build-
ither direction, which will discharge on to the conveyors to be placed on piers.
st collecters and a sweeping system are also provided, and a pump is to be in-
on the first floor in order to pump out water which may overflow during flood
o the boot tanks or hoppers.
e building is to be entirely lighted by electricity. It will also have an electric
er elevator.
e handling capacities of the elevator are estimated to be as follows:—

Receiving grain from boats	18,000	bushels per hour.
Receiving from cars—4 cars per leg per hour, or 16 cars at 1,200 bushels per car	19,200	"
Shipping to vessels by 4 lines of belt conveyors at 20,000 bushels per hour each	80,000	"

h these capacities, and estimating that the house would be receiving only
d of the time, during a season of 150 days, and using the shipping conveyors
verage of only three hours per day, the amount of grain handled through the
one season would be from 15,000,000 to 18,000,000 bushels.
the handling capacities mentioned above must be added: Shipping by direct
boats, if required, at the rate of about 36,000 bushels per hour, and shipping
t the rate of about 48 cars per hour.

WORK OF CONSTRUCTION.

work of construction on the elevator was practically commenced on May 8,
nen the first piles for the foundations were driven. Previous to that date
ing material had been deposited by the harbour plant on the site of the work,
filling brought up to within a few feet of low water level.
ee floating pile drivers were employed in driving the piles from May 8 to
when the last of the piles were driven. During that time the drivers worked
l working days, driving an average of 57 piles per 24 hours, or in all 2,879
Many delays occurred on account of frequent breakdowns in the machinery,
cipally on account of the unexpected hardness of the material in which piles
iven in some places.
first rows of piles on the harbour side had to be driven through the back
of the cribs, already sunk in place, to form the foundations of the shore wharf
Alexandra and King Edward piers, and the filling material in these pockets,
ile driving progressed, became so compact that it was with great difficulty
es were driven to the required depths.
fact, in many pockets and immediately back of the cribwork, such obstruc-
re encountered that the piling was very unsatisfactory.
a special report I advised the reinforcement of this portion of the founda-
y driving an extra row of piles and by connecting the two front concrete foot-
o one footing, so as to make one solid mass of the whole foundation system in
t. This was approved.
uring and driving of these extra piles of course delayed the work to some extent.
material, some distance back of the line of cribs, was easier, and the pile
there was more satisfactory, though at several places the piles had a tendency
or crowd together ,the result being many more piles driven than shown on

original length of piles used was from 25 to 50 feet. and the length, left in the
ter cutting off at proper level, varied from 18 to 42 feet.

Most of the piles were of white pine, and a few of spruce and red pine.

There were 2,444 piles shown on plan, but 2,879 were driven, out of which 17 w broken, 21 too small and 33 unsatisfactory.

The contractors drove a greater number of piles than called for by the pla outside of the 83 extra piles ordered in extra row, and the 71 broken or unsatisfact which were also, of course, ordered to be replaced when possible. By unsatisfact is meant those piles which did not come to a solid bearing.

Adding these piles to the number shown on plans, it still leaves 281 piles o and above the required number, which were not ordered by me nor the inspec This is due partly to the neglect of the contractors to rectify distances, the p having a tendency to shift or crowd together. In many cases, however, obstructi were met with, which threw the piles entirely out of place, and made the driving v irregular, thus making it very hard to follow the lay out shown on plans.

CONCRETE.

As soon as the piles were cut off under water level no time was lost in form an embankment around the site; the water was pumped out, the filling mate levelled up to about 6 inches below top of piles, and the whole site prepared for concrete foundations.

The first concrete was deposited in the work on July 31 and from that date work of concreting was pushed most actively until the beginning of December, w this work had to stop on account of cold weather.

The whole system of supporting piers and armed beams, arches, and the c crete and steel tank floor have been completed in a very satisfactory manner; o 7,000 cubic yards of concrete having been deposited in the work.

Of the concrete work, there remains to complete next spring (1903) a port of the track floor, 2 boot tanks out of 4, the curtain walls between the piers, the t hoppers and the various concrete and steel floors in the structure above the tanks, the floors in the marine tower. This will take a little over 3,000 cubic yards of c crete to complete.

A considerable amount of false work and molds for concrete was required, the tank floor with its system of armed concrete girders and beams was an intric piece of work, which required much care and attention, so as to secure good resu and ample strength throughout. I am glad to say that especially good work has b performed in this connection.

The proportions used in the concrete were generally 1 cement, 2 sand and 5 unscreened crushed stone, and the ingredients were mixed in a Smith rotary mi which did excellent and rapid work. The concrete was dumped from the mixer i special carts, which were elevated when necessary, and wheeled to the deposit place.

CEMENT.

The 'Star' brand of Portland cement was the only cement used on the eleva building, some 9,000 barrels having been used for the work, already done, or an aver of 1¼ barrels per cubic yard.

This cement has proved to be very good, excepting one shipment of 500 barr which was rejected on account of not meeting the requirements, and showing signs underburning. Otherwise the tests have been very satisfactory.

All cement has been tested in the laboratory of the department, and will c tinue to be tested there; no cement is used which does not meet the requirements.

The effect of these tests is not only to prevent the use of poor cement, but to ind the manufacturers to send only the best grade of cement, where it is known that

ll be subjected to tests provided in the specifications and such other tests as er may require.

king these tests the practice recommended by the American Society of Civil has generally been followed, excepting that, after a few experiments, in ve time and delay, the practice was introduced of accepting cement on accel- s made in a box especially constructed for this purpose.

esults of these tests are given at the end of this report in tabulated form. rated tests were very reliable, and compare well with the seven days' tests. the accelerated tests failed the cement was detained for the straight seven to insure against any possible mistake.

dition to this, special tests have been made to determine the relative merits teauguay sand used on the work, and the Sorel yellow sand, compared with rd crushed quartz.

rage tensile strength, briquettes made with the Chateauguay sand gave the ults, being stronger even than the crushed quartz briquettes, and the Sorel west, though these were still much above the requirements.

ncrete work will be resumed as soon as weather will permit in the spring.

STEEL WORK.

end of the year all of the 36 circular tanks for storage of grain had been d the placing of braces in the interstice bins, channel separators and stiff- been commenced.

ork is being done by the Warren City Boiler Works Co:., of Warren, Ohio, ractors, and it has been well handled and well executed.

unching of the plates for the bins was commenced in the company's shop, the shore end of King Edward pier, on July 26, but it was not until Sep- hat enough of the concrete tank floor was ready to permit the first rings of e tanks to be placed in position. From that time this work was carried on usly, and on December 27 all of the 36 tanks were up to the required height. ttom rings in the tanks are made with plates ½-inch in thickness, closely ether, the thickness of the plates being gradually reduced to $\frac{3}{16}$ inch towards

remains a good deal of work to be done yet to complete this portion of the nd the work will be continued during the severe months of the winter with- ption. The placing of the segmental plates from circular bin to circular bin the elevator will be a relatively long job, as will also be the placing of the arators between the bins.

pected, however, that enough of this work will be done at the end of Febru- nit the erection of the structural building, on top of the tanks, to be com-

ominion Bridge Company have the sub-contract for the erection of the marine tower and the passenger elevator tower.

f the steel for the cupola is in their shops ready to be delivered at the ele- s soon as circumstances will permit.

half of the frame for the passenger elevator tower is also ready, and work ne preparing the steel for the marine tower.

s have also been called by the contractors for some of the machinery re- the elevator.

INSPECTION AND RATE OF PROGRESS.

ole of the work for the elevator and for the shore wharf has been closely y competent inspectors in their respective lines, who have been acting

under strict instructions from me, and who have neglected nothing to secure, in eve case, good materials and good workmnaship.

I have personally given the work close supervision, and I am sure the best resul obtainable have been secured.

As to the rate of progress of the work, it may not be as advanced as anticipate but in view of the unavoidable delays caused by the placing of extra piles in found tions as approved; by the rejection of the first shipment of cement, and in vie also of frequent unfavourable weather, I consider that the contractors have do exceedingly well. I may also say that I have had no trouble in having the plans a specifications followed strictly, and that my instructions and decisions in this matt have been cheerfully carried out, whenever any difficulty arose as to their interpr tion. The contractors certainly deserve praise for the excellent work done.

The value of the work done up to December 31 is as follows:—

Elevator building—	
Work done	$281,139 00
Materials on hand	23,120 64
Shore wharf—	
Work done	65,911 74
Materials on hand	5,004 62

CONCLUSION.

In closing this report it is desired to express my appreciation and thanks for t trust placed in me by the department and harbour commissioners.

I desire also to express my appreciation of the courtesies shown me by the Sec tary and Chief Engineer of the Harbour Commission, and to acknowledge the abili and efficiency shown by assistants and inspectors on the work.

SAMPLES of Cement tested for Montreal elevator, up to December 1st, 1902, Departmental Laboratory, by Geo. E. Perley, Engineer in Charge of Testi Laboratory.

RATHBUNS "STAR" BRAND.

Fineness, residue on 2,500 mesh sieve.	·132 per cent.
" " 10,000 "	3·98 "
Blowing	Good.
Initial set	25 minutes.

SAMPLES FROM 1 TO 138 SENT FROM MONTREAL.

STRAIGHT SEVEN DAYS.

Sample.	Neat.	3 to 1.
1	530	150
2	545	150
3	525	176
4	530	155
5	533	153
6	542	151
7	545	165
8	489	121
9	520	157

ONAL PAPER No. 19

SAMPLES FROM 1 TO 138 SENT FROM MONTREAL—*Continued.*

STRAIGHT SEVEN DAYS

Sample.	Neat.	3 to 1.	Second samples sent. Neat.	3 to 1
	599	151		
	540	143		
	404	60	456	107
	458	60	535	107
	477	94	574	163
	531	141		
	157	52		
	361	70	165	100
	505	102	472	101
	490	82	419	104
	106	59		
	372	85		
	439	90		
	462	143		
	529	158		
	503			
	447	110		
	560	146		
	540			
	550	105		
	120	105		
	337	158		
	374	75		
	462	153		
	27	59		
	468	70		
	445	69		
	181	56		
	415	82		
	363	62		
	361	92		
	387	55		
	51	75		
	455	84		
	492	90		
	460	63		
	460	83		
	460	83		
	488	78		
	468	84		
	469	112		
	445	72		
	241	77		
	422	66		
	520	117		
	458	91		
	448	75		
	370	130		
	412	63		
	463	150		
	452			
	446	76		
	586	95		
	547	132		
	530	158		
	479	134		
	506	125		
	527	133		
	529	127		
	534	130		
	535	125		

Samples from 1 to 600 sent from Marlbank :—

Samples.	Accelerated.		7 Days.		28 Days.	
	Neat.	3 to 1.	Neat.	3 to 1.	Neat.	3 to 1
1 to 9	460·5	160·33	489	81·33		
10 to 18	310	79	426	133·66		
19 to 27	427·33	112·66				
28 to 36	418	68				
37 to 45	489	105	553	176·66		
46 to 54	483	161·66	667·66	152·66		
55 to 63	336	131·66	421·66	110·66		
64 to 72		124				
73 to 81		135				
82 to 87	456·66	133·66				
88 to 96		155	661·66	166·33		
97 to 105	492	93·66	605	126·66		
106 to 114	443·5	111	525·66	158·66		
115 to 123	384	111·66	441	118·66		
124 to 132	305	69·5		145·66		
133 to 141	358	72·66	509	150		
142 to 150	463·33	118		172		
151 to 159		134·66	585·33	141·66		
160 to 168	515·33	113·33	592	163·33		
169 to 177		151	613·66	156		
178 to 186	442	118·33	536	154		
187 to 195	502·66	106·66	650·33	184 66		
196 to 204	488·33	123·66	590	154		
205 to 213	542	135·33	585·66	148·66		
214 to 222		160·66	665·66	207		
223 to 231	481	139·66				
232 to 240	455	130·66				
241 to 249	481·33	121	611	131·66		
250 to 258	523·33	127·5	597	154·66		
259 to 267	451·66	116·66	546·33	106		
268 to 276	473	116·33	617·33	112·66		
277 to 285	514·66	120·5	705·66	156		
286 to 294	584	130	698·33	109·33		
295 to 303	557·66	99·66	633·66	139 66		
304 to 312	447·66	117·33	565·33	117·33		
313 to 321	480	100	549	114·33		
322 to 330	566	113·66	599·66	130		
331 to 339	402	102·5	577·33	119		
340 to 348	517·33	102	582	168·33		
349 to 357	469	99	578	177·33		
358 to 366	495	92·5	538·33	130·66		
367 to 375	440·66	57	520·66	116·66		
376 to 384	414	35	552·33	119·33		
385 to 393	413	101	545	122·33		
394 to 402	481·33	99	566	117·33		
403 to 411	491	107	555	134·66		
412 to 420	495·5	118	574·33	139		
421 to 429	458·5	102	591·66	141·66		
430 to 438	454·66	96·33	627·66	116·66		
439 to 447	549	122·33	713·66	153·33		
448 to 456	509·33	113 33	693	196·66	632	305
457 to 465	651	148·33	694	172	598	202
466 to 474	490·33	160·66	702	180		
475 to 483	595	207·33	717·66	227		
484 to 492	337·5	100·33	643·66	136		
493 to 501	338·33	139·66	719	140·33		
502 to 510	405·5	109	720	133·66		
511 to 519	522·66	96	703·33	114		
520 to 528	271	120·66	671·66	173		
529 to 537	532·33	164·33	700·66	167		
538 to 546	376	135	647·66	140·66		
547 to 555	416·66	181	677·66	163	705	240
556 to 564	399·5	139·66	741	209	633	245
565 to 573		115·66	666	169	710	188
574 to 582	360·66	101	609	129		
583 to 591	406·33	109·33	692	133	859	173
to 600	599·66	114·33	725	139	693	195

following samples were sent from Montreal :—

Samples.	Accelerated.		7 Days.		28 Days.	
	Neat.	3 to 1.	Neat.	3 to 1.	Neat.	3 to 1.
. ...	590·66	141	627	172		
....	611·66	150	543	126		
. ...	560·66	114·33	638·66	127·66		
... ...	477	57	—498	108·33		

ıarked thus - - were held for seven days to insure the test.

'CANNON' BRAND.

A BELGIAN CEMENT.

Averages of 3 briquettes.

ecific Gravity.. .. .. '8,924

ıg..No sign, but pat was very white.

;...Initial and full set of 3 neat and 3 to 1 pats.

1...In steam and hot water at 140 degrees F. Initial set, 12 minutes. Full set, 1 hour and 5 minutes the pat looked to be over limed but showed no signs of cracking.

2...In cold water at 60 degrees F. cracked and flaked off but had not set below the scales after 24 hours.

:..In moist air at 65 degrees F. Initial set in 23 minutes, but was soft after 29 hours.

3 to 1.

1...In steam and hot water at 140 degrees F. Initial set, 48 minutes ; full set, 1 hour and 38 minutes, this pat showed an exudation of white limey substance at its base, the pat was only set externally.

:...In cold water at 60 degrees F, never set; when it was being removed from the water after 24 hours it left the glass and became a mass in the dish, showing it to be a very slow setting cement and not fit to be used where it is deposited in water where it will have to bear any weight; the mass was in an unset condition after 96 hours.

...In moist air at 63 degrees F. Initial set, 3 hours and 44 minutes, after 24 hours had partially set but on slight pressure could be squeezed with the finger and thumb to a paste.

	Neat, 7 days.		3 to 1 Average.
.. ..	481.5	Samplo 1..	151
.. ..	451.5	" 2..	143.33
.. ..	490.33	" 3..	146.66
.. ..	535	" 4..	144.33
.. ..	495.66	" 5..	203
.. ..	323.66	" 6..	146.33
.. ..	560.66	" 7..	211.66
... .	471.66	" 8..	181.33
... .	445	" 9..	131
. .. .	522.33	" 10	229.33

small quantity of this cement was used above water level.

WORK DONE IN 1903.

DEPARTMENT OF PUBLIC WORKS,
OFFICE OF THE ENGINEER IN CHARGE,
OTTAWA, January 25, 1904.

SIR,—I have the honour to present herewith my report for the year ending Dece ber 31, 1903, as engineer in charge of construction of the steel grain elevator a adjacent shore wharf now being built in section 15 of Montreal harbour, by t Steel Storage and Elevator Construction Company of Buffalo, N.Y., for the Board Harbour Commissioners, of Montreal.

ELEVATOR BUILDING.

SUMMARY OF WORK DONE IN 1902.

Before going into details as to the work done during the past year, it is perha advisable to give a summary of the state of advancement of this undertaking at t close of the year 1902.

The contract for this work was signed on April 16, 1902, and the work of co struction was practically commenced by the contractors on May 8 following, when t first piles for the foundations were driven.

Pile foundations were completed on July 16 of the same year, and in n annual report for 1902 will be found all details with reference to this portion of t work, a full record of the pile driving and difficulties met with being given, as well a general description of the building, with details as to concrete work, &c.

The first concrete was deposited in the work on July 31, 1902, but this was disco tinued about the beginning of the following December on account of cold weathe at that time the whole of the steel concrete foundations from pile heads to bin botto 46 feet in height, had been completed, with the exception of a portion of the tra floor, two boot tanks and some of the curtain walls between the supporting piers. T total quantity of concrete deposited between July and December amounted to ov 7,000 cubic yards.

As to steel work, at the end of 1902, the 36 circular tanks for storage of grain h been erected, and the placing of tie rods, channel separators and stiffeners was ju commencing.

CONSTRUCTION WORK IN 1903.

Grain Bins.—At the beginning of the year all of the circular tanks havi been erected, work was continued without interruption during the winter month building up and rivetting the small outside segmental bins, placing the channel sep rators between the bins, as well as the angle stiffeners and the tie rods in the intersti bins.

This was a long and tedious job, as it required shifting and straightening tanks in order that the channels be in exact position for connection with the cupo columns. This work was completed in April.

In the meantime, caulking of the seams exposed to the weather had been com menced, and proceeded with until completed on May 11.

All the seams so caulked were covered with red lead.

PAPER No. 19

inting of the outside surfaces of tanks began in May, after the rust had d off with brushes and scrapers. Gray slate paint, furnished by P. Dodds used, and two coats were applied. The painting of tanks was finished on

y opinion that during next summer season another coat of paint should be e tanks.

uble channel separators between the tanks were also filled with concrete.

ames for the suspended bottoms in the two shipping bins were placed in posi- nished with concrete reinforced by ½-inch steel rods. These bottoms stand ve the tank floor.

te Cones in Bins.—As the tanks are resting directly on the tank floor, it was build concrete cones inside, at a suitable slope, to run the grain out through left in the floor. These were formed with cinder concrete filling, covered ch coating of 1:2:4 fine stone concrete, and finished smooth with enough revent the stone from showing up. These cones required about 2,000 yards and were finished August 26.

as taken to place a good layer of pure mortar before depositing the cinder all outside bins in order to prevent all possibility of rain water coming in.

STRUCTURAL WORK.

hole of the structural steel for the cupola, marine and stair towers, was the Dominion Bridge Company, who were awarded, by the contractors, the t for the erection of these structures.

erection work and riveting practically commenced on May 15, and was fully n October.

er, in August the work on the cupola was so far advanced as to permit the e concrete floors to proceed.

loors were made with 1:2:5 cinder concrete 4 inches in thickness, reinforced wire and ½-inch steel corrugated bars, and finished smooth with 1 to 2 mor- 1 inch thick.

ofing was also made of cinder concrete 3 inches thick, reinforced by steel overed with a mixture of tar and asbestic cement, followed by 4 plys of r, then by another thick coating of asbestic cement and tar, with sand op.

ember the concrete floors were tested with three times the live load per as specified, with very satisfactory results, the deflection being very slight, ween $\frac{1}{16}$ and not quite ¼ inch in the beam system, and between $\frac{1}{64}$ and $\frac{1}{16}$ n the concrete slab between supports.

ests were made in all, those of the panels, which were thought to be the f having been made under unfavourable circumstances, having been chosen. ags were used for loading, the deflections being recorded at every additional he strength and rigidity of these floors was so well demonstrated that it was to carry these tests further.

hat time these floors have been subjected to the jars caused by the rolling of very heavy pieces of machinery in all parts of the house, and not the f weakness has developed.

re used is No. 10 (a little less than ⅛ inch in size), 3 strands to the running oven by smaller wire about every 8 or 10 inches. The ½-inch corrugated oned above were used only around openings. The elastic limit of the wire by actual test to be over 1,100 lbs.

he erection of the cupola, marine and stair towers, the whole of the struc- which had received one coat of paint in the shop, was given a second coating essible surfaces.

The exterior walls of the elevator and towers were covered with No. 26 galvani corrugated iron. This work of covering, which had been commenced early in Aug was completed only in December, the delay being due to a general strike of sheet i metal workers in the city.

Early in December all of the buildings were inclosed, windows and do set into place, partitions for the switchboard and lavabo rooms made, and in fact whole of the structural work completed, including painting, bush hammering of concrete outside, &c., &c.

The car doors and the door closing the opening for the marine leg in the mar tower are of the Kinnear roller flexible steel pattern, and they can be worked very eas

Boot Tanks.—Two of the boot tanks, for receiving the grain, were made dur the fall of 1902, the two remaining tanks being made during the summer of 1903. T are constructed of 1:2:4 stone concrete with ½-inch steel rods imbedded, the w being 1 foot in thickness.

They were tested with water, and were first found leaking slightly at a few poi The leaks were pointed with cement mortar, and the whole of the outside surfa coated with a mixture of alum and soft soap, dissolved in water, then with coal ta

About December 21 the water rose around the tanks to a height of 12 feet ab the bottom level, and has stood very high since, without the tanks showing any leaka

This is being watched very closely, and final acceptance will only be given after spring freshet, as there will then be ample opportunity of finding out if they are p fectly water-tight with the water level outside as close to the top as possible. In c nection with these boot tanks, a pump having a capacity of 120 gallons per minute been installed with all necessary piping, so that they may be quickly pumped out case they are filled with water during very high flood seas .

MACHINERY EQUIPMENT.

The work of installing the machinery equipment for the elevator and marine to practically commenced only at the beginning of September.

Elevator Legs.—At the end of the year the main sheaves and pulleys, with th respective shafts and bearings, had been set in position at the head supports and the garner floor for the four lofter legs.

On the ground floor, pulleys have been fixed to the concrete girders, for each one the legs, and the putting up of the steel casing for elevating belts commenced.

About 95 per cent of the sheet iron casing for the lofter legs is ready to be pla in position.

Track Hoppers.—The framing for these, ready to be lined with sheet steel, been made in three of the boot tanks.

Scale Hoppers.—Three of the scale hoppers have been completed and the fou one nearly all rivetted. Part of scale frames and revolving castings, under each sc hopper are also set into place. The capacity of these hoppers is for each over 2,(bushels. In the marine tower the concrete platform for the scale has been made the scale hopper erected, but not yet rivetted.

Garners.—The four garners in the elevator building have been completed and sl ing doors put on. Their capacity each is over 3,000 bushels.

Transfer Conveyors.—The rollers for the two reversible conveyors on the conve floor, the driving pulleys, stretchers and trippers are placed ready to receive the belti

Marine Leg.—At the close of the year the marine leg had been installed, with system of working sheaves, pulleys, cable, &c., and the leg pusher placed in position

Compressed air pipes for the working of the shovels were also attached to the l

The air compressor and reservoir, with connections to the shovel pipes, have a been put up.

APER No. 19

-The cleaning and shipping shovels have been delivered in the marine
far, only the bearings, shafts and pulleys are set in place. In the elevator
driving shaft and pulleys of car shovels have been fastened to the piers.
Machinery.—The two cleaners have been received.
r.—A special floor and special girders have been made on the ground floor
ncrete, where the car puller is located. The car puller machinery is not

destals.—Concrete pedestals have been made on the ground floor for the
f motors. The base of these motors will stand at an elevation + 125′ 8″,
ighest water level.
pes and Drain Pipes.—During the fall a water pipe was laid as far as
by the harbour commissioners, but no connection with the building has
e.
n pipe from the lavabo room, under the ground floor of the elevator, and
narine tower dock, has been laid.
.—All openings intended for the passage of grain through the first floor,
rk hoppers, have been covered with their respective iron gratings.
es.—Man holes and covers for openings have been provided and set into
story to give access to elevator boots, and in the bin floor to give access
f bins.
.—At the end of the year all of the spouts from conveyor floor to bins
in place; also some of the car spouts.
e bins the castings with slides, &c., have been attached ready to receive
the ground story, which are now being made in the contractor's shop.
—The trippers on the conveyor floor have been set on their track framing.
ers have been received, and ready to be placed in position.
lecting System.—The piping for dust collecting in the marine tower has
up.
r Elevator.—The guides for the elevator car, and for the counterweights,
ed ready to receive the passenger car.
-Two railway tracks have been laid in the elevator.

ELECTRICAL EQUIPMENT.

lose of the year, work on the electrical equipment was just commencing
et risers had been laid in north lofter leg insterstice up to spout story,
ng connected with transformer room.
-Filling around the elevator was done during the summer by the Harbour
rs and brought up generally to dock level. Some little filling yet remains

SUMMARY.

izing, at the end of 1903, the construction work on the elevator building,
tair towers was practically completed, about 75 per cent of the machinery
one, and the electrical work was just commencing.
nachinery equipment, excepting the electrical motors, transformers, wires,
l pipes, and a few pieces of machinery were delivered on the ground.
e of men employed during the year varied from 45 up to over 100.
ent used was mostly Rathbun's 'Star' and 'Condor' brands, and each
s tested in the departmental laboratory before acceptance.
inspection of all the work has been carried on, and I must say that good
has been secured in every case; the contractors themselves being anxious
ass work.

The estimated value of the work done to December 31, since the beginning o operations is as follows:—

Work done	$469,199
Manufactured materials on hand	81,471
Total	$550,670

Outside of this there was $3,554 paid for extra piles in foundations, as authorize

There was used in the elevator 10,065 cubic yards of concrete, or nearly 20,00 tons. The quantity of steel used was 2,000 tons, and the weight of machinery to b installed will be 150 tons.

SHORE WHARF.

In September, 1902, a contract was passed between the Harbour Commissioners an the Steel Storage and Elevator Construction Company, for the construction of th concrete superstructure of the shore wharf adjacent to the elevator, between the Kin Edward and Alexandra piers, the Commissioners deciding to have the work executed under the supervision of the engineer in charge of construction of the elevator, as an extra to the elevator contract, the work to be completed as early as possible during th season of 1903, and the contract price being $95,460.

The foundation cribs for this superstructure had previously been sunk in plac by the harbour commissioners, and did not form part of this contract.

The total length of the concrete superstructure is 576 feet, subdivided into thre sections; the sections north and south of the elevator being a retaining wall of a stand ard type adopted by the harbour commissioners, with anchorage rods, &c., and th middle section 200 feet in length in front of the elevator being a hollow concrete dock reinforced with steel bars and supporting the marine tower of the elevator.

At the close of the year 1902, the north section of the retaining wall was reporte to be completed and of the south section three-quarters was done. For the centra section, the foundation piles were reported all driven, about one-third of the hollow concrete dock finished and about half the concrete footing under water done with par of the cap pieces and steel shoes in place.

Concrete work on this dock was resumed after the spring high water of 1903, an fully completed in September of the same year.

The south retaining wall was also finished with all the anchor blocks and rods bollards, &c., as shown on plans.

The concrete used was excellently mixed with a Smith revolving mixer, and depos ited in the work with the utmost care so as to form a compact mass throughout an obtain outside faces without pits or irregularities. The proportion of ingredients use in the mixture was 1 cement, 2 sand and 5 stone for concrete above water, and 1, 2, 4 for concrete under water.

The cement used was Rathbun's 'Star' and 'Condor' brands, which gave excellen results in testing.

The walings under water were laid with care and bolted as shown on plans.

In order to enable me to give the required certificate for work done under water it was necessary to employ a diver, who had no connection with the work, to make an inspection and report.

A rigid inspection was made and a few defects found in the concrete footings under water and in the walings, which were at once remedied by the contractors.

Full completion of the work was reported November 3, 1903.

During the construction of the retaining walls, the cribs supporting them and resting on the formation bottom settled to some extent, thus throwing the waling placed at low water line out of level.

PAPER No. 19

he completion of the walls to the required elevation, +119·00, settling of the nued to some extent while the required earth filling was being added at the walls.

ettling varied from 3 to 8 inches for the north section, and from 2 to 6 the south section, thus causing a few cracks to appear in the walls as orted. These were repaired, and no doubt all settlement in connection with has now stopped.

he completion of the hollow dock in front of the elevator, after the laying ssary rails, the marine tower, which had been erected at the extreme north lled into position at the centre of the dock, and no deflection in the steel k forming the top of this dock was noticed.

me careful inspection was carried on for this work as for the elevator.

clusion I must say that the contractors have shown good will, and have been every case to secure the best results under contract requirements.

I have the honour to be, sir,

Your obedient servant,

ARTHUR ST. LAURENT,

Engineer in charge of construction.

UR, Esq.,

Chief Engineer,

partment of Public Works, Ottawa.

PART V

PORT ON GOVERNMENT TELEGRAPH LINES

FOR THE

FISCAL YEAR ENDED JUNE 30, 1903

GOVERNMENT TELEGRAPH SERVICE,

DEPARTMENT OF PUBLIC WORKS,
OFFICE OF THE GENERAL SUPERINTENDENT,
OTTAWA, January 18, 1904.

ÉLINAS, Esq.,
Secretary, Department of Public Works

SIR,—I beg leave to submit herewith my report on the Government Telegraph ice for the twelve months ended June 30, 1903.

This report, as usual, is prefaced by a list to the present date of the land lines and s in operation, with data of lengths, year of construction, number of offices at pre-established, and an estimate of the traffic handled in each instance.

The usual tabular statements, giving lists of the offices, operating staff, &c., in the al districts are appended to the report; likewise the tariff sheets, showing the rates ged for messages on the several lines.

I have the honour to be, sir,
Your obedient servant,

D. H. KEELEY,
General Superintendent.

GOVERNMENT TELEGRAPH SERVICE.

Location of Lines.	Points connected.	Year.	Length of Lines.			Number of Offices.	Yearly Average of Messages Sent.
			Land Lines.	Cables.	*Total.		
			Miles.	Kt's.			
Newfoundland..	Port au Basque—Cape Ray.....	1883	14	.. .	14	2	
Nova Scotia....	North Sydney—Meat Cove (with loops).	1880-1902	167¼	....	168¼	14	5,00
"	Across Bras d'Or Channel.....	1880	.....	½			
"	" St. Ann's Harbour.....	1887	..	¼			
"	" Ingonish Harbour.	1887	.....	¼			
"	Meat Cove—St. Paul's Island.....	1890	.....	20	23	1	5
"	On St. Paul's Island.....	1890	3	.....			
"	Mabou—Meat Cove.....	1887-1900	109	.....	109	8	2.50
"	Barrington—Cape Sable.	1883	16	.....	17¾	Leased.	
" ...	Across Bear Point Channel.....	1883	....	1½			
"	" Lt. House Channel.....	1883	.....	¼			
"	Main à Dieu—Scatarie..	1902	....	1¾	1¾		
" ...	Mabou—Port Hawkesbury..... ..	1903	42½	.....	73¾		
"	Port Hawkesbury—St. Peters...	1903	31½	....			
New Brunswick.	Chatham—Escuminac.....	1885	42	.....	42	5	60
	Bay of Fundy System:						
"	Eastport—Campobello.....	1880	.. ....	1¾	44¼	10	2,50
"	On mainland Eastport.....	1880	½	.....			
"	On Campobello Island.....	1880	7½	.....			
" ..	Campobello—Grand Manan....	1880	....	7¼			
" .. .	On Grand Manan Island.....	1880	25½	.....			
" ...	Grand Manan—Cheney's Island.....	1890	.....	½			
"	On Cheney's Island	1890	¾	....			
" ...	Cheney's Island—Whitehead Island..	1890	.....	¾			
"	Partridge Island—Fort Dufferin.	1900	.....	¾	¾		
Quebec.....	Bay St. Paul—Chicoutimi.....	1881	92	....	132	7	15,00
"	Branch St-Alexis—Anse St. Jean	1898	40	.....			
"	Anse St. Jean—St. Etienne.....	1903	21	.....	82		
"	Chicoutimi—St. Charles.....	1903	37	.....			
"	St. Anne—Lac Claire.....	1903	15	.....			
"	St. Anne—St. Fulgence....	1903	9	.. ...			
	North Shore Line:						
"	Murray Bay—Chateau Bay.....	1881-1901	1,028½	.. ...	1090	65	
"	Across Saguenay River	1883	.... ..	1½			
"	Bersimis to Manicouagan.....	1883	.....	12			
"	Manicouagan to Godbout.....	1883	.....	26			
"	Chateau Bay—Belle Isle.....	1901	.....	22½			
	Branches:						
"	Bay St. Paul—Petite Rivière.	1903	12	.....	26½		
"	Murray Bay—St. Agnes.....	1903	14½	.....			
	Quarantine System:						
"	Quebec—L'Ange Gardien.....	1885	13	.....	52¾	8	2,30
"	L'Ange Gardien—Orleans Island	1885	.....	¾			
"	On Orleans Island	1885	29½	...			
"	Orleans Island—Isle Réaux	1889	.. ...	2			
"	On Isle Réaux	1889	2½	.....			
"	Isle Réaux—Grosse Isle.....	1889	....	2			
"	On Grosse Isle (all told).....	1885-94	3½	.....			

*For convenience in totalling, the knots of cable are regarded as statute miles.

GOVERNMENT TELEGRAPH LINES—*Concluded.*

ation of nes.	Points connected.	Year.	Length of Lines. Land Lines.	Cables.	*Total.	Number of Offices.	Yearly Average of Messages Sent.
			Miles.	K'ts.			
	Anticosti System:						
.....	Gaspé—L'Anse à Fougère	1881	28	.....	316½	9	1,500
.....	L'Anse à Fougère—Anticosti...	1881	.....	44¼			
.....	On Anticosti Island.....	1881–90	223¾	.....			
.....	Anticosti—Long Point, Mingan.....	1890	.....	21			
	Magdalen Island System:						
.. ..	Meat Cove, C. B.—Magdalen Islands.	1880	.....	55	243	10	2,000
... .	On Magdalen Islands.....	1881-1902	83½	½			
.....	Grosse Isle—Bryon Island.....	1902	.....	11			
.....	Bryon Island—Anticosti.....	1902	.....	93			
.....	*Pelee Island System:*						
.....	Leamington—Point Pelee.....	1889	12	.....	42½	9	800
.....	Leamington Dock—Pelee Island.	1901	.... .	17			
.....	On Pelee Island....	1889-1900	13½	.....			
est.....	Qu'Appelle—Edmonton..	1883	598½	.....	598½	15	9,500
.....	Moosejaw—Wood Mountain..... ..	1885	90½	.....	90½	2	300
.....	Duck Lake—Batoche.....	1902	9	.....	12½	3	200
....	Duck Lake—Indian Agency...	1902	3½	.....			
.....	Edmonton—St. Albert.	1887	9	.....	36	3	
. ...	St. Albert—Qui Barre and Alexandria..	1902	27	.....			
Columbia	Ashcroft—Quesnelle (local wire).....	1878–87	215	.....	215		
.	Victoria—Cape Beale..... ...	1891	118	.....	118	6	800
.	Nanaimo—Comox	1893	81	... ..	81	8	8,000
.	Parksville—Alberni.....	1895	29½	....	86½	2	
.	Alberni—Cape Beale.....	1899	57				
.	Alberni—Clayoquot....	1902	96¾	.....	96¾	4	550
.	Kamloops—Lower Nicola.....	1899	67	.....	67	9	1,400
.	Golden—Windermere.....	1901–2	92	.....	92	4	1,500
.	Duncan Sta.—Salt Spring Isl.....	1902	15	¾	15¾	2	
. .....	Ashcroft—Dawson and Boundary.....	1899-1901	1845		2,252½	53	42,000
.....	Hazelton—Port Simpson and Aberdeen.	1901-1902	202½				
.....	Tagish—Cariboo Crossing.....	1901	18	....			
.. ..	150 mile Sta,—Quesnelle Forks.....	1902	64				
.....	Ashcroft—Lillooet...	1896	62				
. ....	Quesnelle—Barkerville..	1887	61				
	Total end of 1903	.....	5,897½	344¼	6,241¾	259	96,500

REPORT ON THE GOVERNMENT TELEGRAPH SERVICE FOR 1902-3.

EXPLANATORY NOTES.

The tabular statement prefacing this report shows the total mileage, &c., of th telegraph lines operated by the government. Lines that have been subsidized or con structed and transferred by the government for operation by private companies are no included in this list.

The matter in the following pages comprises merely a statement of specific actior taken in the course of the year, and in any case where no particular reference is mad to a line found mentioned in the list, the understanding intended to be conveyed that that line has been satisfactorily operated throughout the year, without any chang of conditions since last made mention of in the annual reports.

NEWFOUNDLAND.

The line from *Port au Basque* to *Cape Ray* continued to be operated as heretofor under an arrangement with the Anglo-American Telegraph Company.

MARITIME PROVINCES.

NEW LINES IN CAPE BRETON.—Of the proposed new lines mentioned in last year report, two sections were contracted for and carried to completion. Native pol (spruce and tamarack) 25 feet long and 5 inches at the top were used in the construc tion, along with No. 6 galvanized iron wire, white porcelain insulators and oak bracket supplied by the government. Mr. Ronald McInnes, of Port Hood, was contractor fo the poles and construction of the Mabou-Port Hawkesbury section, and completed th work in May, 1903. This line measured 42¼ miles. Mr. Murdock Cameron, of Mabo was contractor for the Port Hawkesbury-St. Peter's section, also completed in Ma 31½ miles. Both lines were built under the supervision of Mr. Jas. Hardy, of Gabarou and arrangements for the establishment of offices were in hand at the close of the fisc year. A contract was entered into with Messrs. Ahearn & Soper, Ottawa, for lines the same description as above from St. Peter's to Scatarie, estimated 90 miles, an Gabarous to North Sydney, estimated 25 miles, and that firm has them now under co struction.

NORTH SYDNEY—MEAT COVE AND MABOU LINES.—The operation of these lines co tinued as in the preceding year. The Western Union Telegraph Company havin afforded connection between North Sydney and Mabou, the business exchanged wi Meat Cove and the Magdalen islands and beyond was routed direct or via Mabou occasion required.

Nothing beyond ordinary repair work, performed by the regular staff was call for during the year.

A *general repairer* in addition to the sectional linemen for the stretch from Me Cove to Mabou and Port Hawkesbury was found to be required, and W. J. Smith, Port Hood, was appointed July 1, 1903. A similar arrangement in regard to the Mc Cove-North Sydney line is contemplated, as calculated to render unnecessary a perio ical overhauling of the line by experienced repairers belonging to the telegraph cor pany (W.U.), who have so far lent us their assistance as occasion required.

ENGLISHTOWN-BADDECK REPAIR SECTION.—This is now being attended to by tempo arily employed labour on occasion, the former local lineman being at too great a di tance for prompt service. His engagement ended June 30, 1902.

AREE HARBOUR-CHETICAMP REPAIR SECTION.—This is now divided, Mr. A. ving retired June 1, 1903, and been succeeded by H. K. McLean for the Mar-rbour-Grand Etang half, and M. Lindee for the Grand Etang-Cheticamp

ngonish Ferry (Cowan's Cove Beach) an office was opened, June 29, 1903, G. H. Hackett in charge as agent-operator.

ape St. Lawrence an office was arranged for in June with a view to the estab-there of a station for the signal service next season. An operator is being l to that end.

road Cove the office was found to be inconveniently remote from the growing t about the mines. To meet the requirement, a loop from off the main les, was constructed, and our agent removing to the new site (Inverness) con-charge of the office. (This change was made on October 20, 1903.)

ARDERIE ISLAND.—Provision has been made by Parliament for the construc-telegraph line from Big Bras d'Or to Upper Kempt Head, a distance of 20 he poles of local wood will be got out in the course of the winter, in readiness ilding of the line early as may be practicable next season.

DALEN ISLANDS.—At Point Basse, 4 miles from House Harbour, an office was ugust 1, 1902, with Mr. H. Arseneau as agent operator. This connection made by an extension of the House Harbour loop line.

renewal of the wire provided for as mentioned in last year's report was pro-th in the course of the season, and in consequence of the pole line being found condition its renewal throughout was considered advisable. A quantity of 0 cedars, 25 feet long and 6 inches diameter at the top) were procured from d for most part distributed in the course of the season, and it is proposed to e further requirement in poles and wire to complete the entire renewal next

Etang du Nord sand bar stretch referred to in last year's report was in the August, 1902, spanned by cable; 5½ knots I.R. 2-ton type imported for the and a further length of one knot of the gulf d.s.g.p. type added at the Amherst le to avoid the construction of several miles of land line over swampy ground as found would otherwise have been required to meet it. That Amherst-Nord section has been free of trouble since this improvement was made.

cable between Old Harry and the mainland was interrupted on May 29 damage between high and low water, in a storm at Meat Cove landing. It red to working order on June 2 by our local agent, Mr. A. B. McDonald.

louse Harbour, June 1, 1903, Mr. Camille Delaney was appointed agent as to Mr. P. L. Joncas, deceased.

COSTI ISLAND.—The repair of the cable between Long Point and Mechastic bay, been interrupted since October 24, 1902, as mentioned in last year's report, red until after the close of the fiscal year, as the services of the repair ship ere required elsewhere, and communication with Anticosti was being main-the cables from Gaspé and via Bryon Island. (Note.—This Long Point-bay cable was put in order by the ss. *Tyrian* in August, 1903.)

December 19, 1902, the newly laid cable between Anticosti and Bryon Island ged and broken in a storm close to the beach at the Heath Point landing. It ever, readily got at and the connection was restored by our local agent, Mr. A. on the 23rd.

Fox Bay a special building for office and dwelling of the telegraph agent was n the autumn of 1902, by some workmen from Halifax under the immediate on of an officer from the department at Ottawa, Mr. F. X. Breton. The n landed the material and passengers, and subsequently returned for the the course of some cable work in the vicinity.

At *South Point lighthouse,* Mr. A. Nadeau, who had been in charge of the t graph agency since 1888 passed away in a sudden illness on October 25, 1902. Mr. Bradley was temporarily transferred to that office from Shallop Creek.

The position of general repairer, which had been filled since 1896 by Mr. Beaudin at Salt Lake, became vacant in consequence of his resignation and leaving island, and Mr. A. Allard, who had been temporarily acting, was appointed to succ him, June 1, 1903.

Bryon Island.—The cables laid in November, 1902, as mentioned in last yea report, were landed in the cove at the south-eastern end of the island; and from terminal hut a two-wire land line was carried a distance of a mile to the house of W. Dingwell, who has taken the agency. The office was in charge of an instruc (Miss B. Bingham) during the winter. As thus connected in circuit Bryon Isla is a way office on the Magdalen Islands-Anticosti line.

Bay of Fundy lines.—The cable, 7½ knots, between Grand Manan and Campobe ceased working on March 11, 1903. The *Tyrian* could not be put into service till af the close of the fiscal year, and so the repair had in consequence to stand over.

(Note.—This cable was taken in hand in the middle of July, and communicat was restored on July 25. In the course of the work the cable was found very ba deterioriated in the vicinity of the Liberty Point (Campobello) landing, so instead renewing it there, the abandonment of that spot as contemplated on the last occas for repair was carried out, and the landing place was changed to the further end of H ring Cove; the land line being at the same time shifted to meet it. While the cab ship was in the neighbourhood an aerial stretch between Grand Manan and Ross Isl (Cheney's Island line) that had been supported by three tall masts, fallen into dec was replaced by a length of 1,000 feet of deep sea cable g.p. gulf type from the st on board.)

At *Whitehead Island,* in January, 1903, the former agent, Mr. J. D. Harv resigned the office and was succeeded by Mrs. Webster Cassaboom.

North Shore St. Lawrence Lines.—Considerable construction work was und taken in the Chicoutimi district in the course of the year. The gap between Anse Jean and St. Etienne (21 miles) was filled in; a line from Chicoutimi via St. Anne s Shipshaw to St. Charles (37 miles) was in hand at the close of the fiscal year, and f ther extensions from St. Anne to Lac Claire (17 miles) and Descente des Femm (10 miles) had been decided upon; likewise branch lines from Bay St. Paul to Po Rivière (12 miles) and Murray Bay to St. Agnes (14½ miles).

All of these lines have since been built, as noted in the list prefacing this repo In the construction, cedar poles 20 feet long, 6 inches diameter at the top, and No galvanized iron wire, with white porcelain insulators, and oak brackets were us The work in each instance was done by days' labour under the supervision of an offi of the department.

The office or repair station, formerly at Lacruche, has been discontinued, repairer, A. Gauthier, having removed to St. Urbain. In the same neighbourho however, an office has been established at LaGaletta with S. Oulette in charge sin August 25, 1902.

At *Otis* (St. Felix d'Otis), on the line between St. Alexis and Anse St. Jean, office was opened on June 30, 1903, at that date in charge of a teaching operator.

At *St. Catharine's Bay,* near Rivière au Canard, an accommodation office for firm of Price Bros. was opened in April, 1903.

At *Tadousac,* for the greater convenience of the community, an office was oper in July, 1902, at the Tadousac hotel for the summer months.

Scougalls Mills, Manicouagan.—The loop line built in the spring of 1901, mentioned in the report for that year, from Pointe Paradis to a point on the ri opposite the mill, was in August, 1902, carried further up across the river to the m a distance of nine miles. The mill company supplied and put up the poles and department furnshed the material (18 miles No. 6 wire, with insulators,, brackets, &

AL PAPER No. 19

COUAGAN CABLES.—On December 12, 1902, in the presence of the circum-
t the Long Point-Anticosti cable was out of order, an interruption occurred
e between Bersimis and Godbout, so cutting off the whole of the north shore
below that section. Pending the result of the investigation for the
courier service was established for the exchange of messages; and in Janu-
nterruption having finally been traced to the cable between Manicouagan
out, arrangements were made for the forwarding at first to and from Point
and later between Scougalls mill and Godbout. This service, the couriers
vo trips per week each way, was continued until April 22, when the passing
l bad weather admitted of an examination of the cable by our local agent,
. Comeau, of Godbout, who found it parted 3½ miles from the beach at
gan, and succeeded in effecting a repair and restoring the connection. In
ce of the experience here related, and the liability of the north shore being
such troubles in the Manicouagan cables, the department had decided upon
ruction of a land line between Bersimis and Godbout, and provision has
e in the estimates for such a line, to be built in the course of the coming

DRAKE-ST. JOHN'S RIVER TELEPHONE WIRE.—For the accommodation of the
essrs. Robin, Collas & Co. the privilege of putting a telephone wire on the
pole line between those two places, a distance of 29½ miles, was granted in
902, the firm engaging to pay an annual rent therefor.

ke City.—At this new place, between St. Marguerite and Seven Islands, an
opened on April 17, 1903, for the accommodation of the firm operating the
s.

ador Extension.—It will be seen by reference to the tabular list of offices
rth shore, in the appendix to this report, a considerable number of repair
as been added to those established when the line was first opened up beyond
quimaux. On occasions when line troubles called for attention, there was
culty in finding men ready to engage for the work, because of their fishery
and the expedient of securing such occasional services by fixed allowances,
recourse to. Several repair sections in charge of regular linemen have been
d, and the local repairers, stationed at the offices in those sections, are at
the removal of line troubles in their immediate neighbourhood. These ar-
ts were effected by an officer from the department, Mr. A. Boyer, who was
appointed to go over the ground for the purpose, and it is expected that with
isions for the up-keep of the line will be maintained in good and reliable work-
all the way through. Although the maintenance of the line under these
s is expensive, it is likely less so than any other means of reaching the far
would be; and it may perhaps not be inopportune to mention here that the
n consonance with the view taken by the department at the outset when the
ion of this land line in lieu of a system of cables, as had been contemplated,
rmined upon. In a report upon the matter submitted by the writer to the
le the Minister of Public Works, under date December 6, 1895, and in which
ve estimates were given of the cost of cables and of a land line, the con-
of a land line was advocated, for several reasons, and amongst other ad-
that such a work would afford it was pointed out that: The suggested cable
n (between Anticosti and Belle Isle, ref. report of September 6, 1889) would
ll in with the original scheme under which the existing line has been carried
Esquimaux. This line is fulfilling a very useful purpose, and its further
would no doubt prove a great boon to the scattered settlements along the
sides which the maintenance of a land line would give employment to some
ple, and contribute to their means of livelihood, an advantage that would be
out any saving) were the telegraph laid under water all the way.

BELLE ISLE CABLE.—This cable, which was repaired on July 18, 1902, as mentio in the last annual report, was again damaged by ice in February, 1903, but communi tion was had through it by telelphone until June 23, when it gave out, probably ow to further damage, as there were then some icebergs in the straits. On June 27, h ever, it was again found workable by telephone at prearranged intervals.

(NOTE.—This condition continued until the ss. *Tyrian* visited the locality August. The damage was located on the Belle Isle side, and three badly crushed sp were found within a mile of the landing there. In one spot, about 500 feet off shore, in 17 fathoms of water, the 12-ton locked-armour shore end was crushed The repair was completed on August 29, 1903.)

MARCONI WIRELESS TELEGRAPH STATIONS.—These stations at Chateau Bay and B Isle, 20 miles apart, have continued to be operated daily, with but one or two interr tions, due to the local instrument troubles, that were found and rectified by the ope tors, ever since they were put in satisfactory operation, August 1, 1902.

(NOTE.—In the course of the past season, September, 1903, a mast, in three leng of the same height as the first one—150 feet—was erected at a spot about ½ of a m from the latter at Chateau Bay, for the purpose of demonstrating the practicability operating it from that location, which is in front of very high ground, and affords only desirable site for a dwelling in the neighbourhood. The system was found to w equally well under these conditions. The mast remains there in readiness for use event of the erection of a building being decided upon. The aerial wire, &c., w returned to the first mast, and the operating hut was overhauled and put in better sha as in its exposed position it had been found too light and thin for the rigour of preceding winter.)

GROSSE ISLE QUARANTINE LINE.—Communication beyond St. François, Orle island, became interrupted on January 23, 1903. Subsequent investigation placed trouble in the cable stretch between Isle aux Réaux and Grosse Isle, but it was impr ticable to attempt repair until after the ice moved down in the spring, and it was till May 19 that, after many detentions of the boats by bad weather, communicat was restored. The trouble was due to ice catching the cable at the inner side of channel off Grosse Isle, and straining the section towards shore to such a degree as produce a disruption of the conductor at the junction of the old and new types of ca described in last year's report.

ONTARIO.

PELEE ISLAND LINE.—The Pelee Island cable is in the same condition as repor last year. The break that occurred on July 3, 1902, was repaired on the 25th of same month by the local superintendent, Mr. J. M. Selkirk, of Leamington; but it broken again on September 12, and repaired on November 7, and gave out again in days later. An attempt to restore the communication was made in the month of M 1903, but it only lasted three days, 16th to 19th—since when the proposed change route or importation of additional new cable to replace the older portion of the stre has been under consideration in the department.

NORTH-WEST.

WOOD MOUNTAIN LINE.—In consequence of the country through which a part this line runs having been settled and put under cultivation, the desirability of shift the line from its present location in places so as to follow the road allowances that h been provided, has been brought to the notice of the department, and arrangements being made for the requisite supply of poles for this purpose, and likewise for renew of the pole line in several sections that were swept by the prairie fires that occur during the absence of rain late in the autumn of 1902 and last spring.

w BUNCH.—A projected extension of the Wood Mountain line to Willow 8 miles is being provided for in the estimates for next year.

PELLE-EDMONTON LINE.—There were no serious interruptions throughout the in any case, as has already been mentioned in these annual reports, the ce of our line making connection with the Canada Pacific Telegraph system points affords the means (merely at the cost of extra tolls) for the routing messages between points on our line that might happen to be temporarily line troubles. The damage caused by prairie fires has called for a renewal s in several sections, and these are being arranged for. As an interesting n to our knowledge of existing conditions, the following might well be n a report presented by Mr. Macdonald under date November 3, 1902:—

l that the life of the tamarack pole is about equal to that of cedar, while, on its hardness and smoothness it resists fire very much better. In fact, for w years, it is practically invulnerable to prairie fires. To secure tamarack ll be necessary to arrange early, as they are taken from swamps, accessible g the winter.'

had been the practice heretofore to procure cedar poles whenever practicable o costly, this information might perhaps prove valuable to others besides the t having to do with pole lines in the North-west Territories.

ose the office closed in June, 1902, upon the transferrence of Agent J. W. Saddle Lake, was reopened August 1, 1902, with G. G. Mann as agent-line-

QUI BARRE AND ALEXANDRIA.—In August, 1902, the extension of the Ed- . Albert telephone line to River Qui Barre, 21 miles, was put in hand, and he further extension to Alexandria, 6 miles, was carried out. Local wood e line and No. 9 galvanized iron wire were used in the construction, which under the immediate supervision of the district superintendent, Mr. J. S. l.

skatoon, in June, 1903, an old and devoted employee of the service passed e decease of Mr. J. Harrington, who had acted in the capacity of lineman tion since January, 1888. The position was temporarily filled pending an nt. (Note.—Appointment since made: Geo. Clement, October 1, 1903.)

BRITISH COLUMBIA.

NI-CLAYOQUOT LINE.—This line, the construction of which was had in view vas built under contract by Mr. M. J. Conlin, and put in operation on De- 1902. The line runs from Clayoquot townsite along the coast, thence via s on Effingham inlet and along the shore of Alberni canal (86¾ miles) to posite Franklin creek, where a cable (½ mile) crosses the canal and connects ni by a wire (10 miles) on the previously existing pole line. Total length, Offices have been opened at Ucluelet, Clayoquot and Stubbs island (the ccommodation office for a private firm).

NI-CAPE BEALE LINE.—This section is being maintained and operated in n with the Canadian Pacific telegraph, in connection with the Pacific cable d creek.

MO-COMOX LINE.—The repair sections of the Alberni and Comox lines at have been separately attended to since December 1, 1902, when the joint nt with the Canadian Pacific Railway began. Since June 1, 1903, a regular V. Mills, has been appointed for the Parksville-Quellicum (Comox line)

RIA-CAPE BEALE LINE.—In consequence of the rough environment of this ntinues to be difficult of maintenance in reliable operation, as explained in nual reports. At times, however, when the interruption is in but one spot

the offices on either side of the trouble can exchange messages by way of the conn ing company's line via Nanaimo.

SALT SPRING ISLAND TELEPHONE LINE.—With a view to rendering this connec of greater utility, the department is making provision for the further extensio it a distance of 9 miles to reach an important centre on the island. The present extends, as mentioned in last year's report, from Duncan station, on Vancouve land, to Edwards store, on Salt Spring island, 15¾ miles.

YUKON.

(This division embraces the Ashcroft-Quesnelle B. C. line and branches.)

A complete list of offices and testing stations, with intermediate distance recently revised, will be found in the tariff sheets in the appendix to this rep also amongst the tabular statements of offices, &c., a complete list of the staff empl on the Yukon system.

New Branch Line.—A line from 150 Mile House to Quesnelle Forks, a dist of 64 miles, was built under contract by Mr. J. C. Shields, of Aschroft, and pleted and put in operation on November 1, 1902. Poles of local wood and No. 8 vanized iron wire were used in the construction.

TELEGRAPH SERVICE GENERALLY.

Cableship.—Owing to there being no available appropriation, the ss. *Tyrian* not got ready so early in the season as she might otherwise have been for the that was to be undertaken. Hereunder is a memorandum of the vessel's movem and estimated proportion of time chargeable to the different works indicated. whole of the work taken in hand was successfully carried out; and the ship was about expeditiously.

MEMORANDUM OF SERVICES OF THE SS. TYRIAN, SEASON, 1903.

		Days.	
uly	Preparations for sea.	31	Repairing Grand Manan-Campobello cable; and substitution of 10 ft. cable (gpds) for aerial stretch between G.M. & Ross Island.
"	En route Grand Manan.		
"	G.M.-Campobello cable.		
"	G.M. Ross Island.		
"	En route to Halifax.		
ug.	Preparations for sea.	22	Repairing Long Point-Anticosti cable.
"	Coaling Sydney.		
"	En route Long Point.	10	Repairing Belle Isle cable.
"	Long Point Cable.		
"	Supplies at Gaspé.	13	Erection of Second Marconi mast in new position.
"	En route Chateau Bay.		
"	Belle Isle Cable.	6	Examination Bryon cables, and Coaling at Sydney.
ept.	Marconi Mast.		
"	En route Gaspé.		
"	Bryon Island.	10	Del. renew. Chat. Bay & Belle Isle for Marconi station.
"	Coaling, Sydney.		
"	En route Chateau Bay.		
"	Marconi renewals.	3	Install. of Auto. Rep., Heath Point and remov. local trouble S.P.Ant.
ct.	En route Heath Point.		
"	Heath Point, South Point.		
"	Bryon Island.	2	Rep. Bryon Island-Grosse Isle cable.
"	Heath Point, &c.		
"	En route St. Peters.		
"	St. Peters Canal.	3	Laying cable stretch (200 feet) across canal at St. Peters.
'	Provisions, Baddeck.		
"	Scatari and Main à Dieu.		
"	En route Halifax.	4	Examination of cable and placing guards at Scat. & Man.
	Total	104 days.	

e was a subsequent run to Cape Sable for examination of the cable there, while the ship did duty for the Department of Marine before going into win-ers.

great deal of credit is due to the ship's commander and those associated with ng the season, it is with no small sense of gratification that the writer is able here, in addition to the foregoing, that just as the *Tyrian* was housed and the winter (December 9, 1903), an application was received from the Direct ates Cable Company for her services for the purpose of making a repair in Beach section. The ship was forthwith (at the cost of the company) refitted eeded to work. As a result a letter shortly afterwards came to hand from any's superintendent at Halifax, Mr. S. Fenn, from which the following may uoted:—

will have heard of our record repair . . . . We were only 36 hours away lly only 12 at the work. In Captain O'Leary, Chief Engineer Zwicker, and wain (Mr. Wm. Goodwin), the department have three excellent officers. I essed by the quiet methodical and business like way in which the work on carried out.'

commendatory message is gladly taken note of here, as its intention can but ghly appreciated in behalf of and by every member of the staff and ship's

company who had a hand in this interesting expedition. The break in the cable in deep water (about 125 fathoms), 20 miles from Halifax.

REVENUE AND EXPENDITURE.

The revenue and expenditure for each of the lines in the several districts he before mentioned are given in the following table:—

1902-03.	Expenditure.	Revenue.	Rem
	$ cts.	$ cts.	
Lower St. Lawrence and Maritime Provinces:—			
Anticosti Island lines	4,394 76	1,677 11	
Bay of Fundy "	2,749 07	743 95	
Cape Ray "	500 00		
Cheticamp "	2,654 44	1,305 86	
Escuminac "	634 80	137 95	
Magdalen Islands, and Bryon Island lines	4,924 82	1,011 65	
Father Point Agency	500 00		
Meat Cove line (including St. Paul's Island)	4,784 22	231 85	
North Shore St. Lawrence (East of Bersimis) (including $346.45 for Bouchard	18,258 02	3,262 29	
" " (West of Bersimis)	6,027 42	1,784 62	
Quarantine line	4,750 15	426 30	
Cable ship *Tyrian*, renewals of plant, &c	36,669 69		
Subsidies, stationery, line and office material and contingencies, chargeable to appropriation for Gulf lines	6,568 76		
Total for Lower St. Lawrence, &c.,	93,446 15	10,581 58	
Ontario, Pelee Island line	396 84	73 95	
North-west telegraph lines	20,000 00	3,560 43	
British Columbia, Alberni-Cape Beale line	1,118 00	13 16	
Alberni-Clayoquot line	1,856 53	91 17	
Golden-Windermere line	2,589 32	453 85	
Kamloops-Nicola	684 05	710 12	
Comox (including Alberni line)	3,817 00	2,430 46	
Vancouver-Salt Spring Island line	179 10		
Victoria-Cape Beale line	4,607 21	424 09	
Carriboo-Lillooet		477 43	
Yukon, Bennett-Dawson	242,211 51	113,605 93	
Telegraph service generally	2,442 58		
Total	373,348 29	132,422 17	

Signal Service messages, Meteorological

DEPARTMENTAL TELEPHONE SERVICE.

e end of June, 1903, the telephone connections with the central office of the phone Company at Ottawa, listed as chargeable to the special appropriation, 228, the annual charge for which amounts to $8,757. These connections are d amongst the several departments as hereunder:—

Department.	Offices.	Residences.	Annual charge.
			$ cts.
	5	3	305 00
eral	2	1	115 00
	2	2	163 00
	3	2	185 00
	4	2	203 00
House	4	3	308 00
mmons	13	3	620 00
nue	4	5	320 00
	16	5	810 00
urvey	2	1	110 00
lice	2	1	120 00
rs	2	1	110 00
	5	8	470 00
	1	2	105 00
olice	6	2	313 00
Fisheries	5	4	338 00
Defence	12	9	812 00
	6	2	315 00
ry Library	1	2	120 00
il	4	5	335 00
d Canals	4	3	270 00
State	3	2	180 00
s	23	12	1,395 00
r Works	3		155 00
Department	3	3	210 00
	3	1	140 00
ommerce	2	3	180 00
artment	1		50 00
	141	87	8,757 00

APPENDED TABLES.

sual tabular statements of the lines and offices, staff, &c., of the telegraph lowing hereupon, will be found to contain whatever additions or changes have up to June 30, 1903.

D. H. KEELEY,
General Superintendent.

, January 18, 1904.

GOVERNMENT TELEGRAPH SERVICE.

NEWFOUNDLAND TELEGRAPH SERVICE.

No.	Stations.	Intermediate Distance.	Agent and Operator.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		$ cts.		
1	Port au Basque.....	0	.....	50 00 or commission..	.....	N.B.—The commission is 25 per cent upon all business to and from the office; said commission guaranteed not to be less than at the rate of $50 per annum.
2	Cape Ray Lighthouse.....	14	.....	50 00 " ..	.....	
	Total	14		100 00 " ..		

N.B.—The above short line is constructed in connection with the Signal Service, and connects at Port au Basque with the land line system of the Anglo-American Telegraph Company.

No.	Stations.	Intermediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		$ cts.		
1	Fox Bay	0	Geo. Cabot	300 00	May 13, 1900	Increased from $200 since December 1902.
2	Heath Point	23	A. Tremblay	50 00 or commission	Aug. 1, 1900	For local agency.
3	South Point Lighthouse	32½		200 00 "	Nov. 1, 1902	For cable repeating station.
				50 00 "		Mr. A. Nadeau former agent deceased and B. Bradley of Shallop Creek in charge since January 1903.
4	Shallop Creek	17½		240 00 "	July 7, 1881	Temporarily closed since January.
5	Salt Lake	52½	A. Allard, agt. repairer	360 00 "	June 1, 1903	Plus $1 per day when on duty as general repairer.
6	South-west Pt. Lighthouse	15	A. Z. Lemieux	420 00 "	" 1, 1901	Increase from $300 since May 1903.
....	Jupiter River	7		50 00 "		
....	Otter River	17½		50 00 "		
....	Becscie River	22		50 00 "		
....	Cape Eagle (Ellis Bay)	10		50 00 "		
7	West Point Lighthouse	9	A. Malouin, dist. supt.	344 00 per annum	Aug. 1, 1900	
			" operator	50 00 "	" 10, 1881	
8	English Bay	3	F. Cabot	300 00 and commission	July 1, 1882	Increased from $120 since December 1, 1902.
....	Mechastic Bay (cable landing)	14½				
	Totals	223¼		2,514 00		

South-west Point connects with l'Anse à Fougère, Gaspé, by cable 44¼ knots; and from Mechastic Bay connection is made with Long Point of Mingan by cable 21 knots.

0	L'Anse à Fougère		N. Bernier	17 00		Special allowance for the cable terminus. A testing station only.
1	Gaspé Basin	28	J. J. Annett	420 00	Oct. 16, 1881	Transfer office. Connection with G.N.W. telegraph system.
		28		437 00		

GOVERNMENT TELEGRAPH SERVICE—*Continued.*

MAGDALEN ISLANDS SYSTEM.

MAGDALEN ISLANDS SECTION.

No.	Stations.	Intermediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		$ cts.		
1	Amherst	0	Miss J. Shea	50 00 or commission	Oct. 1, 1882.	The commission is 25 per cent on all business to and from the office in each instance; said commission guaranteed to be not less than at the rate of $50 per annum.
2	Amherst Lighthouse	9	Wm. Cormier	50 00 "	June 11, 1881.	
3	Etang du Nord village	15	I. G. Binet, gen. repairer	400 00 "	Dec. 1, 1900.	Plus $1 per day when absent on duty.
			Mrs. A. Binet	50 00 "	" 1, 1881.	
4	Etang du Nord Lighthouse	1	N. Arseneault	50 00 "	Sept. 1, 1891.	Two-wire loop line.
5	Grindstone Island	5	W. Leslie	Commission 25 p.c.	May 20, 1897.	
6	Grindstone West		A. LeBourdais, dist. supt.	600 00	Aug. 17, 1880.	Plus $1 per day when absent on duty.
			Mrs. LeBourdais, operator.	50 00	Sept. 15, 1893.	
7	House Harbour (½ knot cable)*	3	Camille Delaney	50 00 or commission	June 1, 1903.	Mr. P. L. Joncas former agent deceased.
8	Wolfe Island	28½				
9	Grosse Isle	11	N. Clark	50 00 or commission.	" 1, 1888.	For local agency.
				360 00 "	Dec. 1, 1902.	For repeating station.
10	Grand Entry	11	Mrs. F. Atkins	50 00 "	Feb. 18, 1882.	
		83½		1,760 00		
11	*Point Bass—2 Wire loop from House Harbour	4	H. Arseneau	50 00 or commission	Aug. 1, 1902.	
12	Bryon Island	1	W. Dingwell	150 00	Jan. 1, 1903.	Two wire loop line from terminal hut for Grosse Isle and Anticosti cables.

Grosse Isle connects at Old Harry with Meat Cove, C.B., by cable 55 knots; and connects with Bryon Island by cable 11 knots; thence to Heath Point Anticosti 93 knots.

		Miles.				
1	Meat Cove (cable station)	6	A. B. McDonald, Circuit Manager	720 00	Nov. 7, 1880.	Salary. $500 per year previous to Sept. 1, 1901. The commission is 25 p.c. on all business to and from the office in each instance; said commission guaranteed to be not less than at the rate of $50 per annum.
2	Aspy Bay	10½	I. Y. Nichols	50 00 or commission	July 1, 1894.	
3	Dingwall (loop line)	3⅝	Murdock McLeod	50 00 "	Aug. 31, 1898.	The loop line formerly running to White Point has been withdrawn.
4	Neil's Harbour (half-way house loop line)	2¾ / 14 / 1¾	M. McLeod	50 00 "	April 1, 1887.	
5	Ingonish North Bay	9	J. M. Burke	50 00 "	" 1, 1882.	
6	South Ingonish	10½	Geo. Brewer	50 00 "	May 7, 1899.	
7	Ingonish Ferry	2	G. H. Hackett	50 00 "	June 29, 1903.	
8	French River ¼ knot cable	21	John McDonald	50 00 "	April 1, 1899.	
9	Indian Brook	5	Annie McDonald	50 00 "	Aug. 1, 1901.	
10	Murray (loop line)	14 / 10	R. B. Matheson	25 p.c. R & Cks	Jan. 20, 1902.	25 per cent commission only.
11	Englishtown ½ knot cable	7	W. Bingham	120 00 and commiss.	July 19, 1882.	Switching point for Baddeck line.
	South Gut, St. Ann's (on loop)	5		50 00 "		Closed December 31, 1899.
12	Baddeck (on loop)	13	A. Anderson	120 00 "	Dec. 2, 1898.	Guaranteed comm'n was $50 prior to March 1, 1900.
—	Englishtown (back on loop)	18				This loop to Baddeck starts from and returns to Englishtown.
13	Kelley's Cove, N. Campbellton	6	Miss M. Campbell	50 00 or commission	April 1, 1885.	
14	Big Bras d'Or ¼ knot cable	2½	Mrs. E. Livingston	50 00 "	Jan. 1, 1889.	
15	North Sydney	12½	W. U. Tel. Co	Commis'n only		The commission is 50 p.c. on local business and 25 p.c. on through messages; and covers supervision of line and office accommodation at North Sydney.
	Repairers' Sections.					
	Meat Cove—Sugar Loaf		M. McAskill	80 00	April 1, 1898.	
	Sugar Loaf—Ingonish		Charles Smith	100 00	" 1, 1898.	Increased from $80 since June 1, 1903.
	Ingonish—Englishtown		R. A. McDonald	80 00	" 1, 1898.	
	Englishtown—Baddeck				" 1, 1898.	This section attended to on occasion by locally employed labour since July 1, 1902.
	Englishtown—N. Sydney		M. D. McLeod	60 00	" 8, 1902.	
	Murray—Indian Brook		John Smith	25 00	June 17, 1902.	
	Totals	168¼		1,855 00		

Meat Cove station connects with the Magdalen Islands system by a cable to Old Harry Head, 55 knots, and with St. Paul's Island by a cable of 20 knots. The latter is operated with telephones.

1	St. Paul's Island	3	S. C. Campbell	50 00	Oct. 1, 1890.	Land wire across the island, Atlantic Cove to Trinity Cove.

GOVERNMENT TELEGRAPH SERVICE—*Continued.*

MABOU-CHETICAMP AND MEAT COVE, C.B., TELEGRAPH SYSTEM.

No.	Stations.	Intermediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		$ cts.		
1	Mabou	0	Mrs. M. McDonald	120 00 per annum	April 1, 1887.	The commission is 25 p. c. of the Government line tolls, and is guaranteed to amount to not less than $50 per annum. Where 50 p. c. commission is paid there is no guarantee as to amount.
2	Broad Cove	20	Mrs. Annie McLelland	50 00 or commission	Mar. 1, 1892.	
3	South-west Margaree	12	J. D. McFarlane	50 00 "	*Feb. 1, 1898.	
4	Margaree Harbour	5	H. K. McLean	50 p. c. R. & Cks	Oct. 20, 1896.	
5	North-east Margaree (loop-line wire)	10	Mrs. J. D. Ross	50 00 or commission	Feb. 1, 1898.	
6	Grand Etang	8	G. Doucet	50 00 "	Sept. 13, 1902.	This office re-opened after having been closed since January 1899.
7	Cheticamp	8	Mrs. M. Fiset	100 00 "	" 1, 1887.	*At South-west Margaree the commission was 50 p.c. till Sept. 1, 1899.
8	Pleasant Bay	27	Mrs. D. Smith	50 00 "	Apl. 14, 1900.	
	Meat Cove	19	See Meat Cove Line. D. C. Dawson, D. Supt.	150 00 "	Jan. 1, 1887.	
	Repairer's Sections.—					
	Mabou—Strathlorne		L. G. McDougall	40 00 per annum	Nov. 3, 1902.	
	Strathlorne—S. W. Margaree		J. D. McFarlane	40 00 "	June 4, 1902.	
	S. W. Margaree—Margaree Harbour		Alex. McFarlane, sr.	40 00 "	" "	
	Margaree Harbour—Grand Etang		H. K. McLean	25 00 "	" 1, 1903.	
	Grand Etang—Cheticamp		M. Lindee	25 00 "	" "	
	Cheticamp—Barren		F. Aucoin	40 00 "	" "	
	Barren—Pleasant Bay		J. A. McLean	40 00 "	" "	
	Pleasant Bay—Polits Cove		K. Fraser	40 00 "	" "	
	Polits Cove—Halfway Shanty		E. Fraser	30 00 "	" "	
	Halfway Shanty—Meat Cove		R. Fraser	40 00 "	" "	
	General lineman		W. G. Smyth, Pt. Hood	420 00 "	July 1, 1903.	Salary covers horse-hire, etc.
	Totals	109		1,400 00		

No.	Stations.	Intermediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		$ cts.		
1	Barrington	0				This line has been leased to the Barrington Telephone Company from August 12, 1897. The lease is terminable at any time.
2	Newellton (including 1½ knots cable)	11				
3	Cape Sable Island lighthouse (including ¼ mile cable)	6¾				
	Totals	17¾				

EAST COAST SECTION.

N.B.—In connection with the Signal Service, a land line, 208 miles in length was erected in 1881, between Canso and Halifax, for a bonus of $16,000, and is maintained and operated by the Western Union Telegraph Company, without further cost to the Government.

GOVERNMENT TELEGRAPH SERVICE—*Continued.*

BAY OF FUNDY, N.B., TELEGRAPH SYSTEM.

GRAND MANAN SECTION.

No.	Stations.	Intermediate Distance.	Agents and Operators.	Salaries per annum.	Date of Appointment.	Memo.
	Long Eddy Cable Hut to	Miles.		$ cts.		
1	Flagg's Cove	3	Mrs. C. C. Seely (D. Supt.)	540 00	Nov. 18, 1880	*The commission is 25 p. c. on all business to and from the office in each instance; said commission guaranteed not to be less than at the rate of $50 per annum. When 50 p. c. commission is paid there is no guarantee as to amount.
	"		Miss M. E. Burnham	50 00 or commission	Oct. 1, 1898	
	"		A. Gilmour, repairer	60 00	Dec. 1, 1894	
2	Castalia	2½	G. E. Dalzell	Commission 25 p.c.	June* 1, 1898	
3	Woodward's Cove	3½	W. A. Fraser	" 50 p.c.	Feb. 28, 1893	
4	Grand Harbour	2	J. L. Newton	75 00 or commission	April 1, 1887	$25 per annum is included for repeating Whitehead branch.
5	Seal Cove	4½	J. Ingersoll	50 00 "	Sept. 22, 1899	
6	Southern Head Lighthouse	5½	O. McLaughlin	Commission 25 p.c	April 24, 1897	Southern Head office is now operated by telephone from Seal Cove.
	Branch Line.					
	Grand Harbour	0				
7	Cheney's Island (½ knot cable)	4¾	W. Cheney	Commission 25 p.c	Feb. 1, 1891	
8	Whitehead (Island (¾ knot cable)	1½	Mrs. W. Cassaboom	50 00 or commission	Feb. 1, 1903	
	Cable Long Eddy to Liberty Cove	7¼				
	Liberty Cove Cable Hut to					
1	Welchpool	7½	Miss E. G. Vennell	210 00 and commis'on	Sept. 1, 1895	
	Cable across channel	1¾				
	Eastport, Maine U.S.A.	½	J. Cushing	200 00	Dec. 26, 1881	
	Totals	44¼		1,035 00		

No.	Stations.	Intermediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		$ cts.		
1	Chatham	0	Great North-western Telegraph Co	185 00		This amount is paid for supervision of the line and office accommodation at Chatham.
	Black Brook	5½		50 00 or commission		The commission is 25 p. c. of the Government line tariff receipts in each instance, and is guaranteed to amount to not less than $50 per annum.
2	Baie du Vin	15	Mrs. M. Williston	50 00 "	Mar. 1, 1885	
3	Lower Hardwicke	6	Mrs. M. Brimmer	50 00 "	Aug. 1, 1891	
4	Escuminac	3⅜	D. Lewis	50 00 "	Sept. 1, 1885	
5	Point Escuminac lighthouse	12	K. R. McLennan	50 00 "	Nov. 1, 1893	$12 per annum allowed for care of main battery at Point Escuminac.
	Totals	42		435 00		

GROSSE ISLE QUARANTINE TELEGRAPH SYSTEM.

1	Quebec	0	Great North-western Telegraph Co	185 00		This amount is paid for supervision of the line, and covers rent of pole line from Quebec to L'Ange Gardien, for which $35 per annum is charged.
	L'Ange Gardien	13				
	Orleans Island (cable)	¾				
2	St. Pierre	4½	C. Turcott	50 00 or commission	Mar. 1, 1885.	This commission is 25 p. c. of the Government line tariff in each instance, and guaranteed to amount to not less than $50 per annum.
3	Ste. Pétronille	3½	M. Plante	50 00 "	April 7, 1896.	
4	St. Laurent	6½	M. Gobeil	120 00 and 25 p. c. commission.	Sept. 15, 1888.	
5	St. Jean	7	P. Pouliot	120 00 and 25 p. c. commission.	July 1, 1888	For local agency.
				480 00 per year.	May 1, 1902	Chief operator and repairer.
6	St. François	6¾	O. Lemelin	50 00 or commission.	" 15, 1900.	
7	Isle Reaux (including 2 knots cable)	3½				
	Isle Réaux (land line)	2½				
8	Grosse Isle quarantine office (including 2 knots cable)	3½	M. D. Masson	100 00 and 25 p. c. commission.	May 1, 1902.	$4 per month for messenger serv. in summer, and $12 p. annum allowed for care of main batt. at Gr. Isle.
	Quarantine telephone system 2-wire line	1¾				NOTE.—The telephone system on Grosse Isle since May 1893, has comprised 1¾ miles of 2-wire line with 11 connections or stations.
		52¾		1,155 00		

GOVERNMENT TELEGRAPH SERVICE—*Continued.*

CHICOUTIMI AND NORTH SHORE OF ST. LAWRENCE, TELEGRAPH SYSTEM.

CHICOUTIMI SECTION.

No.	Stations.	Intermediate. Distance.	Agents and Operator.	Salaries per annum.	Date of Appointment.	Memo.
		Miles.		$ cts.		
1	Bay St. Paul		F. Boivin	180 00 per annum 25 p.c. commission	Previous to April 1, 1885	*The commission on business is 25 per cent of the Government tolls of the line; the amount guaranteed to be not less than $50 per annum.
2	St. Urbain	9	A. Boivin A. Gauthier (repairer)	50 00 or commissi'n* 210 00	" 1, 1885 May 15, 1887	
3	La Galetta	37	S. Ouellette	100 00	Aug. 25, 1902	
4	St. Alexis	31½	Mrs. D. Simard	50 00 or commission	Nov. 1, 1899	Plus $25 per year for operating branch line to L'Anse St. Jean.
5	St. Alphonse de Bagotville	3	A. Simard	50 00 "	April 1885	
6	Chicoutimi	11½	G. N. W. Tel. Co J. Fortin (repairer)	25 p.c. commission 420 00 per annum	Nov. 1893 June 1, 1897	Plus $12 per annum for care of main battery. J. Fortin's division includes the branch line to L'Anse St. Jean.
7	Br. Line St. Alexis					
	Br. Line St. Felix d'Otis	10		50 00 "	June 30, 1902	
	Br. Line L'Anse St. Jean	30	Mrs. R. Martel	50 00 or commission	Aug. 1, 1897	Plus $12 per annum for care of main battery.
	Totals	132		1,110 00		

No	Stations.	Intermediate Distance.	Agents and Operators.	Salaries per annum.	Date of Appointment.	Memo.
		Miles.		$ cts.		
1	Murray Bay	0	Mrs. F. Vincent	50 00 or commissi'n.	Previous to April 1, 1885	
2	Cap à l'Aigle	4	N. Duchesne	50 00 "	June 1, 1888	
3	St. Fidèle	6	A. N. Parent	50 00 "	April 1, 1890	
4	Port au Persil	7	A. Brassard	50 00 "	May 1, 1889	
			A. Brassard (repairer)	210 00 "	June 1, 1897	
5	St. Siméon	4	D. Gaudin	50 00 "	Dec. 1, 1887	
6	Baie des Rochers	12	G. Savard	50 00 "	June — 1887	
7	St. Catharines Bay	Br. L. 17	G. Bouilenne	100 00 "	Nov. — 1886	Mr. Bouilenne at River Canard (St. Catharine) Bay has acted as repeating operator for the St. Etienne branch since August, 1899.
8	St. Etienne		E. Bouilenne (repairer)	210 00 "	Sept. 1, 1899	
9	Tadousac (1¼ knot cable)	13	J. E. Caron	50 00 "	Nov. 1, 1888	
10	Sacré Cœur Br. from Tadousac	12½	L. Maltais	50 00 "	Dec. 6, 1901	
11	Bergeronnes	15	M. Savard	50 00 "	April — 1885	
12	Escoumains	12	J. H. Topping	50 00 "	" — 1885	
13	Baie des Bacons	8	P. Bouchard		May 6, 1892	Commission, at 25 per cent, without guarantee at Baie des Bacons.
14	Mille Vaches	8	J. A. Puise	50 00 or comm'n	April — 1885	
15	Hamilton Cove	11½	C. P. Easton		Sept. 1, 1903	Accommodation office.
16	Portneuf light	6	S. Bouchard	50 00 or comm'n	July 1, 1890	
			E. Courbron (repairer)	420 00	April 1, 1888	
17	Sault au Cochon	7		50 00 or comm'n		Sault au Cochon closed September 30, 1896.
18	Bersimis	31	Mrs. A. Laurier, agt & opr	500 00	Jan. 1, 1902	
			asst. opr.	180 00		
			E. Pope, dist. supt	600 00	April — 1885	
	*Totals	174		2,870 00		

*Note.—In the estimates the maintenance of the Chicoutimi and North Shore line is provided under head of North Shore Line. They are operated conjointly.

GOVERNMENT TELEGRAPH SERVICE—*Continued.*

CHICOUTIMI AND NORTH OF ST. LAWRENCE TELEGRAPH SYSTEM—*Continued.* NORTH SHORE (East of Bersimis).

No.	Stations.	Intermediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		$ cts.		
1	P'te aux Outardes (cable)..	12	H. Tremblay.....	50 00 or commission*	Dec. 1, 1896	
	P'te Paradis (Manicouagan) cable landing.....	18	....	... .	... .	The repeating office formerly at Manicouagan was removed to Bersimis in September, 1896.
2	Scougalls Mills 14 mile loop line from Pte. Paradis...	28	Accomodation office.....	25 p.c. commission	Aug. — 1901	
3	River Godbout (cable)....	26	N. A. Comeau.....	50 00 or commission	Oct. 15, 1885	
4	Pointe des Monts.....	18½	L. F. Faffard..	50 00 "	Dec. 28, 1883	
5	Trinity Bay West.....	5½	Z. Poulin.....	50 00 "	May 16, 1884	
6	Trinity Bay East..... ..	2½	A. Bilodeau	25 p.c. commission	" 1, 1889	
7	Caribou Islands.....	7	I. Comeau	"	Sept. 1, 1889	
8	Pointe aux Anglais.....	10½	Paul Côté	Accommodation office...	Jan. 10, 1895	No commission is paid at this office.
9	Pentecost River.....	6½	E. H. Tétu, D. Supt.....	1,080 00 per annum....	Nov. 1, 1891	
10	Ste. Marguerite...	47½	A. Therriault.....	180 00 "	July 1, 1888	
11	Clark City..	5	Accomodation office.....	25 p.c. commission	April 17, 1903	
12	Seven Islands.....	17¾	P. E. Vignault, opr	180 00 per annum....	Jan. 2, 1884	
			L. N. Caron.....	540 00 "	May 29, 1902	Plus 50 cents per day when absent on duty.
13	River Moisie.....	15½	J. Poirier.	50 00 or commission.	June 1, 1896	
14	Little River	57	Miss H. Leberge.....	50 00 " .	Oct. 10, 1900	
15	Sheldrake	15	A. LeBerge.....	50 00 " .	" 1, 1897	
16	Thunder River.....	6½	Mrs. H. Cody	50 00 " .	Feb. 1, 1890	
17	Magpie.....	14	Geo. Molloy.....	50 00 " .	Oct. 1, 1889	
18	St. John's River	9	B. Chambers.....	50 00 " .	" 1, 1889	
19	Long Point.....	10	A. Maloney..... ...	360 00.....	Sept. 21, 1896	Long Point is the repeating office for the Anticosti
20	Mingan.....	7	M. J. Maloney..	50 00 or commission.	Oct. 1, 1889	cable in operation since September 1, 1891.
21	Point Esquimaux.....	24	Mrs. D. C. Hould.....	240 00 per annum....	Sept. 1, 1897	Allowance for office rent $4, per month.
			Edwd. Cyr, inspr..	500 00 "	Nov. 2, 1902	Plus 50 cents per day when absent on duty.
22	Betchouanes...	20	Alfd. Bodreau, repr.....	112 00 " .. .	Sept. 1, 1902	
			Mrs. A. Boudreau, opr..	100 00 "	" 1, 1902	
23	Piastre Bay.....	23	S. Tanguay, repr.....	112 00 " ...	" 18, 1902	
			Mrs. J. Beetz, opr.	100 00 "	" 18, 1902	
24	Watichou	15	J. Saltman, repr	112 00 "	Nov. 1, 1902	
			Mrs. Saltman, opr.....	100 00 "	" 1, 1902	
25	Aguanus..	21¾	S. Galant, repr.....	112 00 "	Sept. 3, 1902	
			Mrs. Galant, opr.....	100 00 "	" 3, 1902	
26	Natashquan	21	C. Vignault, repr.....	112 00 "	" 5, 1902	
			Miss Vignault, opr.....	100 00 "	" 5, 1902	
27	Kegashka	22	Geo. Anderson, repr... .	112 00 " .. .	" 16, 1902	

				[Miss P. Gambois, opr.	100 00	"	....	" 19, 1902	
32	Harrington	20		J. Jones, repr.	112 00	"	....	" 20, 1902	
				Mrs. Jones, opr.	100 00	"	....	" 20, 1902	
33	Whale Head	17		Nap. Nadeau, repr & opr.	212 00	"	....	Jan. 21, 1903	
34	Mutton Bay	20		Alf. Cormier, repr & opr	444 00	"	....	June 1, 1902	
35	Bay de Ha	27		.....	.....	.....	.....	.....	Not yet opened.
36	St. Augustine	27		G. W. Bargess, repr & opr.	212 00	per annum	....	Sept. 25, 1902	
37	Coxipi	24		Jos. Picard, repr & opr.	212 00	"	....	Dec. 16, 1902	
38	Rockey Bay	30		W. Kennedy, repr & opr	212 00	"	....	Sept. 27, 1902	
39	St. Paul River	21		G. Chevalier, repr.	112 00	"	....	Oct. 2, 1902	
				Miss Chevalier, opr.	100 00	"	....	" 2, 1902	
40	Brador Bay	29		Johnny Jones, opr	100 00	"	....	June 13, 1903	
				P. C. Vignault, inspr.	500 00	"	....	Feb. 1, 1903	Plus 50 cents per day when absent on duty.
41	Blanc Sablon	6		Thos. Morel, repr & opr.	212 00	"	....	Oct. 1, 1902	
42	Forteau Bay	13		A. Hart, repr & opr.	212 00	"	....	July 19, 1902	
43	Pointe Amour	7		Thos. Whyat, repr & opr	112 00	"	....	Feb. 17, 1903	
44	Western Modiste	16		Jas. Bolger, repr & opr.	212 00	"	....	Oct. 5, 1902	
45	Red Bay	18		Geo. Moore, repr	112 00	"	....	" 9, 1902	
				Miss Moore, opr.	100 00	"	....	" 9, 1902	
46	Chateau Bay	30		Jos. Maloney, opr & inspr	500 00	"	....	Sept. 1, 1902	
				Miss Buckel, asst opr.	180 00	"	....	Dec. 1, 1902	
47	Belle Isle	23¾		J. C. Colton, opr.	360 00	"	....	Sept. 14, 1901	
	Totals	916			10,566 00				

GOVERNMENT TELEGRAPH SERVICE—*Continued.*

ONTARIO—PELEE ISLAND TELEGRAPH SERVICE.

No.	Stations.	Intermediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		$ cts.		
1	Leamington	.....	J. McR. Selkirk, D. Supt.	50 00	Nov. 1, 1888	
2	Leamington Dock	2	F. Deslauriers	Accommodation office	" 1, 1895	
3	Club House	5	C. Harrison	Commission 25 p. c.	April 1, 1889	The commission is on the tolls for the Government line.
4	Point Pelee	5	W. A. Grubb	"	Nov. 1, 1888	
	Leamington Dock to North Point Cable	17				The cable formerly 9½ knots from Point Pelee to the Island is now laid as here indicated 17 knots. The change was effected in August, 1901.
5	North Point Lighthouse	1	J. R. Ledwell	Commission 25 p. c.	June 1, 1899	
6	North Dock	2	C. B. Quick	"	Nov. 1, 1888	
7	McIntyre's Corner	2½	Mrs. A. McIntyre	"	" 1, 1896	
8	West Dock	2½	A. M. McCormick	"	" 9, 1888	
9	South Dock	5½	T. W. Ferguson	"	July 1, 1900	
	Totals	42½		50 00		

NOTE.—This line is operated with telephones.

No.	Stations.	Intermediate Distance.	Agents.	Salary per Annum.	Date of Appointment.	Remarks.
	Qu'Appelle-Edmonton Section.	Miles.		$ cts.		
1	Qu'Appelle	0	J. S. Macdonald, D. Supt.	1,200 00	Jan. 1, 1898	
			C. P. R. Tel., Co.	420 00	Dec. 1, 1896	The agent-operator at Qu'Appelle is joint with the C.P.R.
			J. W. Wilson, lineman	360 00	Mar. 1, 1902	
2	Fort Qu'Appelle	17	Miss E. Johnston	600 00	March 1, 1885	
3	Touchwood	46	A. VonLindeburg	600 00	Nov. 1, 1883	
—	Humbolt	78				Humboldt office was closed August 20, 1893.
4	Saskatoon (14 miles loop)	69	C. P. R. Tel. Co.	300 00	Jan. 1, 1892	The agent-operator at Saskatoon is joint with the C.P.R.
			J. Harrington, repairer	600 00	" 1, 1888	
5	Henrietta	52	W. Salsbury	720 00	Oct, 1, 1886	
6	Battleford	47	L, P. O. Noel	720 00	April 15, 1890	
			J. T Callahan, lineman	720 00	Dec. 1, 1900	
7	Bresaylor	27	D. Noel	720 00	Oct. 1, 1900	
—	Pitt	62				Closed since October, 1898. Lineman thereafter stationed at Onion Lake.
8	Onion Lake	13	H. McCleneghan	600 00	Oct. 1, 1900	
9	Moose	32½	G. G. Mann	600 00	Aug. 1, 1902	
10	St. Paul de Metis	32	M. Therien	360 00	Dec. 1, 1899	
11	Saddle Lake	13	J. W. Carroll	600 00	Sept. 1, 1900	A telephone line extends from the office at Saddle Lake to the Industrial School, 6½ miles.
12	Victoria	37	J. C. Gordon	600 00	April 1, 1899	
13	Star	6	V. Gauvreau	600 00	Mar. 15, 1902	
14	Ft. Saskatchewan	43	A. W. M. Campbell	600 00	Oct. 1, 1898	
15	Edmonton	24	T. J. McNamara	360 00	Oct. 1. 1901	The office at Edmonton has been operated jointly with the C.P.R. Tel. Co. since Jan. 1, 1892.
			W. McKay, lineman	720 00	May 1, 1886	
		598½		12,000 00		
	Branch Line.					
—	Edmonton	0	In operation prior to 1895			This branch line is operated by the Edmonton District Telephone Co.
16	St. Albert	9				
17	River Qui Barre	21	This section built in 1903			
18	Alexandria	6				
		36				

GOVERNMENT TELEGRAPH SERVICE—*Continued*

LINES IN THE NORTH-WEST TERRITORIES.

No.	Stations.	Intermediate Distance.	Agents.	Salaries per Annum.	Date of Appointment.	Memo.
	Wood Mountain Section	Miles.		$ cts.		
1	Moosejaw	0	C.P. Tel., agent	240 00	Dec. 1, 1891	Moosejaw office is operated jointly with the Canadian Pacific Telegraph Co.
			H. Sikes, repairer	600 00	" 1, 1893	
2	Wood Mountain	90½	J. H. Thompson, agent	360 00	" 1, 1890	
		90½		1,140 00		
	Duck Lake Section.					
1	Batoche	0	D. H. Grant	120 00	Oct. 1, 1902	
2	Duck Lake	9	A. H. Gordon	120 00	Feb. 1, 1903	
3	Indian Agency	3½	.....	.....	.....	Telephone connection.
		12½		$240 00		

BRITISH COLUMBIA.

	Victoria—Cape Beale.		(See note in margin)	.....	.....	NOTE.—The superintendence of this line has been in the hands of the resident engineer at Victoria since October, 1901, when the arrangement theretofore in operation with the C. P. Ry. Co. was terminated.
1	Victoria	0	E. Houghton, oper. (C.P.Tel)	200 00	Nov. 1, 1891.	Proportion of salary.
	Sooke	18	.....	.....	.....	
2	Otter Point	8	E. Gordon, agt. and operator.	720 00	Dec. 1, 1891.	
3	Jordan River (San Juan)	10	J. Goodie, "	540 00	May 1, 1897.	
4	Port San Juan (Port Renfrew)	30	B. H. Kirkpatrick, "	720 00	July 1, 1900.	
5	Carmanah Lighthouse		W. P. Daykin, "	240 00	Nov. 1, 1891.	
	(Clo-oose 2 miles west)	24	D. Logan, repairer	540 00	April 1, 1898.	
			Otto Rosander, repairer	540 00	March 6, 1901.	
6	Cape Beale	28	M. Patterson, agt. and oper'r.	120 00	Sept. 1, 1899.	
	Total	118		3,660 00		

		Distance.			$ cts.		
	Kamloops—Lower Nicola. Telephone Line.	Miles.	(See note in margin)	...	...	...	NOTE.—This line is operated under the superintendence of the resident engineer at Victoria.
1	Kamloops	0	A. J. Venn (C. P. Tel.)	Agent	300 00	April 18, 1900. Connected.	
			Prov. Govt. Office	Lessee		July 1901	NOTE.—The lessees pay a monthly rent for the connections, and are allowed 25 per cent commission on local tolls for messages and conversations of non-subscribers.
2	Anderson Creek	12	W. McLeod	"		"	
3	Nicola Valley		W. R. McDonald	"		"	
4	Stumps Lake	13	Thos Bullman	"		"	
5	Beaver Ranch		J. W. Moor	"		"	
6	Outchena	20	A. E. House	"		May 1900	Three additional connections in July 1901.
7	Nicola Lake	9	E. O'Rourke	"		"	
8	Coutlee		Blair & Co	"		July 1901	
9	Lower Nicola	13	G. Armstrong	"		May 1900	
	Total	67					

GOVERNMENT TELEGRAPH SERVICE—*Continued.*

BRITISH COLUMBIA—*Continued.*

No.	Offices.	Intermediate Distance.	Agents, &c.	Positions.	Salaries per Annum.	Date of Appointment.	Memo.
	Nanaimo-Comox.	Miles.			$ cts.		
1	Nanaimo	0	W.F. Archibald. A. M. Oliver, joint with C.P.R.	Agent and operator Assistant operator	306 00 120 00	Mar. 1, 1896 June 1, 1902	The amount comprises $20 per month for agency and operation, $3 for messenger service and $2.50 for battery care.
2	Wellington	5	E. & N. Ry. Co.	Agent and operator	Commission	April 1, 1893	
3	Parksville	23	Mrs. R. Williams W. Mills	" Lineman	360 00 360 00	Dec. 1, 1897 June 1, 1903	Parksville, Quellicum section.
4	Union Bay	32¼	Miss. E. McDonald. Thos. Hudson	Agent and operator Lineman	360 00 780 00	June 3, 1898 Nov. 17, 1898	
5	Union Mines	.....	J. Dunsmuir	Accommodation office	120 00		See mention of this in body of report (1897-98)
6	Cumberland	10	Albert Peacy	Agent and operator	and com. 25 p. c.	April 28, 1898	
7	Courtney	7	.....	.....	.....	.....	Courtney and Comox communicated by telephone at pre-arranged intervals.
8	Comox	33¼	M. McDonald	Agent and operator	360 00	Nov. 1, 1895	
	Total	81			2,766 00		
							NOTE.—The repairs of this line has been done jointly with the Can. Pac. Telegraph since December 1, 1902.
	Parkeville, Alberni and Cape Beale line.						
	Parksville	0	(See above)				
1	Alberni	29½	Mrs. P. A. Haslam	Agent and operator	240 00	Oct. 1, 1899	Proportion of salary for Comox line included.
2	Cape Beale	57	M. Patterson	" "	240 00	May 1, 1900	Proportion of salary for this line.
		86½			480 00		

No.	Office.	Inter-mediate Distance.	Agents, &c.	Positions.	Salaries per Annum.	Date of Appointment.	Memo.
	Alberni-Clayoquot Line.	Miles.			$ cts.		
1	Alberni	0	P. A Haslam	Agent and operator	120 00	Dec. 1, 1902	Proportion for this line.
2	New Alberni	2	E. B. Gerrard	Agent lineman	660 00	" 1, 1902	
	Franklin Creek	8					Line crosses canal at this point by submarine cable.
	½ mile cable.						
3	Ucluelet	20½	W. L. Thompson H. J. Hillier	Agent lineman Lineman	720 00 660 00	Dec. 1, 1902 " 1, 1902	
4	Clayoquot	66½	E. S. Reeve	Agent lineman	720 00	" 1, 1902	
	Stubbs Island			Accommodation office			Private cable connection for local firm.
	Total	96½			2,880 00		
	Golden, Windermere line.						
1	Golden	0	C. E. Wells	Agent and operator	300 00	Mar. 1, 1902	Joint agent with C.P. Tel.
2	Windermere	82	V. F. Dunn T. W. Kimpton	Agent Lineman	720 00 900 00	Jan. 1, 1902 May 1, 1902	Local superintendency. Salary covers horsehire, &c.
3	Athalmer	*5	Teleph. connection				Operated from Windermere and Wilmer.
4	Wilmer	5	R. A. Power		600 00	Jan. 1, 1902	
	Total	92			2,520 00		

* This 5 miles runs back on the pole line from Windermere.

GOVERNMENT TELEGRAPH SERVICE.

YUKON LINES.

NAMES of employees and monthly salaries, Yukon Telegraph Service, which inclu
Port Simpson-Hazelton, Lillooet and Horse Fly Branches.

(As submitted in a report bearing date December 19, 1902).

Name.	Capacity.	Where Employed.	Amount.	Remarks.
			$ cts.	
G. E. Gooding	Manager	Ashcroft*	61 20	Joint emplo with C.P.R
F. C. Schanz	Operator	" †	42 00	p.c. of whi
E. L. Coombs	"	" ‡	42 00	paid by Yu telegraphs.
S. Pritchard	Lineman	"	75 00	
P. R. Quain	Clerk	"	83 33	
S. A. Macfarlane	Oper. & Lineman	Lillooet	60 00	
A. LeBourdais	" "	Clinton	60 00	
S. Hannah	" "	115 Mile House	60 00	
S. T. Hall	" "	115 "	60 00	
S. Patenaude	" "	Harper's Camp	40 00	
O. Landry	" "	Quesnelle Forks	66 66	Horsefly Bra
C. H. Smith	" "	Soda Creek	60 00	
A. Bowron	Operator	Quesnelle	60 00	
O. Earley	Lineman	"	60 00	
Geo. E. Broughton	Oper. & Lineman	Alexandria	60 00	
James Stone	" "	Baskerville	60 00	
J. H. Waller	Operator	Blackwater	75 00	
C. E. MacMaster	Lineman	"	70 00	
W. T. Broderick	Operator	Bob Tail Lake	75 00	
A. McDonald	Lineman	" "	70 00	
W. F. Manson	Operator	Stoney Creek	75 00	
J. McNeil	Lineman	"	70 00	
G. W. Proctor	Operator	Fraser Lake	75 00	
J. W. Howison	Lineman	"	70 00	
W. Heinz	Operator	Burns Lake	75 00	
B. Laskbrook	Lineman	"	70 00	
J. R. Cameron	"	South Buckley	70 00	
James A. McKay	"	"	70 00	
A. McInnis	"	North Buckley	70 00	
N. McInnis	"	"	70 00	
L. Broughton	"	Buckley Branch	70 00	
H. Fink	"	"	70 00	
T. F. Cowan	Operator	Morricetown	75 00	
T. Gagné	Lineman	"	70 00	
G. M. Swan	Operator	Hazelton	100 00	
E. R. Cox	"	"	100 00	
J. C. K. Sealy	Lineman	"	75 00	
E. E. Charleson	Line F'man & storekeeper	"	150 00	
J. D. Charleson	Asst. storekeeper	"	75 00	
H. A. Cullen	Operator	1st Cabin	75 00	
G. T. Brown	"	Kuldo	75 00	
G. T. Carpenter	Lineman	"	70 00	
Chas. Martin	Operator	3rd Cabin	75 00	
H. P. Travis	"	4th "	75 00	
J. McMenamin	Lineman	4th "	70 00	
E. A. Hawley	Operator	5th "	100 00	
C. Loucks	Lineman	5th "	90 00	
J. Muir	Operator	6th "	100 00	
W. Ross	Lineman	6th "	90 00	
J. D. McIntosh	Operator	7th "	100 00	
Geo. Smith	Lineman	7th "	90 00	
J. Mooney	Operator	8th "	100 00	
G. Duhamel	Lineman	8th "	90 00	
J. Wiggins	Operator	9th "	100 00	
G. Hill	Lineman	9th "	90 00	
J. Berlinguet	Operator	Echo Lake	100 00	
H. Moore	Lineman	"	90 00	
R. Barton	Operator	25 Mile Cabin	100 00	
J. W. Hovey	Lineman	25 "	90 00	
J. A. Watts	Operator	Iskoot	100 00	
W. Warnock	Lineman	"	90 00	
W. T. Patterson	"	Sheep Creek	75 00	
F. N. Jackson	"	"	75 00	

ES of employees and monthly salaries Yukon Telegraph Service, which includes Port Simpson-Hazelton, Lillooet and Horse Fly Branches.

(As submitted in a report bearing date December 19, 1902).

Name.	Capacity.	Where Employed.	Amount.	Remarks.
			$ cts.	
. Taylor	Operator	Telegraph Creek	100 00	
ohnson	Lineman	" "	75 00	
. Charleson	Line f'man & storekeeper	" "	150 00	
aoust	Operator	Shesley	82 50	
es Craig	Lineman	"	75 00	
. Gillespie	Operator	Nahlin	82 50	
es Murie	Lineman	"	75 00	
. Hail	Operator	Nakina	82 50	
glas Potts	Lineman	"	75 00	
. Goodfellow	Operator	Pike River	82 50	
uston	Lineman	"	75 00	
rt Simpson Branch.				
omlinson	Operator	Meanshinisht	50 00	
omlinson	Lineman	"	75 00	
. Boss	Operator	Skeena Canyon	75 00	
l. Davis	Lineman	"	70 00	
Clark	Operator	Telegraph Point	75 00	
terson	Lineman	"	70 00	
Coutu	Operator	Aberdeen	75 00	
V. O'Neil	"	Port Simpson	50 00	
Lawrence	Lineman	Atlin	75 00	
l. Goodfellow	Operator	"	100 00	
ronach	"	Centre Cabin	82 50	
V. Dowling	Circuit Mangr	Atlin	116 66	
. Chambers	Operator	Caribou Crossing	82 50	
R. Grimes	"	Tagish	82 50	
. Macdonald	Lineman	"	75 00	
Clegg	Dist. Supt	White Horse	175 00	
ilchen	Storekeeper	"	150 00	
. Champagne	Clerk	"	112 00	
. Fleming	Agent	"	115 00	
. Marshall	Lineman	"	75 00	
hadwell	Messenger	"	25 00	
Jeffries	Cook & housekeeper	"	75 00	
ope	Operator	Lower Leberge	82 50	
. Brown	Lineman	"	75 00	
Vinet	Operator	Hootalinqua	82 50	
V. Graham	"	Big Salmon	82 50	
okken	Lineman	"	75 00	
S. Lanktree	Operator	Five Fingers	82 50	
l. Lanktree	Lineman	"	75 00	
. MacLachlin	Operator	Fork Selkirk	82 50	
mith	Lineman	"	75 00	
Peter	Operator	Selwyn	82 50	
Wridgeway	Lineman	"	75 00	
ymore	Operator	Stewart River	82 50	
. Beausoleil	"	Ogilvie	82 50	
chlin	Lineman	"	75 00	
rownlow	Manager	Dawson	150 00	
anley	Operator	"	125 00	
outure	Foreman	"	125 00	
. MacKenzie	Operator	"	125 00	
. MacDonald	Clerk	"	100 00	
D. Hunt	Cook & housekeeper	"	100 00	
loes	Messenger	"	93 00	
Heloche	Lineman	"	80 00	
. McCraken	Operator	Forty Mile	82 50	
W. Boyd	Lineman	"	75 00	
V. Crean	Superintendent	Vancouver	208 16	
Healy	Clerk	"	140 00	
. Abbott	Stenographer	"	65 00	
. Phelan	Dist. Sup't	Ashcroft	175 00	
			10,440 01	

* $85 per month. †$70 per month. ‡$70 per month.

A table of distances between Offices and Testing Stations will be found at the end of the appended sheets.

GOVERNMENT TELEGRAPH SERVICE.

YUKON LINES.

NAMES of employees and monthly salaries, Yukon Telegraph Service, which inclu
Port Simpson-Hazelton, Lillooet and Horse Fly Branches.

(As submitted in a report bearing date December 19, 1902).

Name.	Capacity.	Where Employed.	Amount.	Remarks.
			$ cts.	
G. E. Gooding	Manager	Ashcroft*	61 20	Joint emplo
F. C. Schanz	Operator	" †	42 00	with C.P.R.
E. L. Coombs	"	" ‡	42 00	p.c. of whic
				paid by Yu
				telegraphs.
S. Pritchard	Lineman	"	75 00	
P. R. Quain	Clerk	"	83 33	
S. A. Macfarlane	Oper. & Lineman	Lillooet	60 00	
A. LeBourdais	" "	Clinton	60 00	
S. Hannah	" "	115 Mile House	60 00	
S. T. Hall	" "	115 "	60 00	
S. Patenaude	" "	Harper's Camp	40 00	
O. Landry	" "	Quesnelle Forks	66 66	Horsefly Bra
C. H. Smith	" "	Soda Creek	60 00	
A. Bowron	Operator	Quesnelle	60 00	
O. Earley	Lineman	"	60 00	
Geo. E. Broughton	Oper. & Lineman	Alexandria	60 00	
James Stone	" "	Baskerville	60 00	
J. H. Waller	Operator	Blackwater	75 00	
C. E. MacMaster	Lineman	"	70 00	
W. T. Broderick	Operator	Bob Tail Lake	75 00	
A. McDonald	Lineman	" "	70 00	
W. F. Manson	Operator	Stoney Creek	75 00	
J. McNeil	Lineman	"	70 00	
G. W. Proctor	Operator	Fraser Lake	75 00	
J. W. Howison	Lineman	"	70 00	
W. Heinz	Operator	Burns Lake	75 00	
B. Laskbrook	Lineman	"	70 00	
J. R. Cameron	"	South Buckley	70 00	
James A. McKay	"	"	70 00	
A. McInnis	"	North Buckley	70 00	
N. McInnis	"	"	70 00	
L. Broughton	"	Buckley Branch	70 00	
H. Fink	"	"	70 00	
T. F. Cowan	Operator	Morricetown	75 00	
T. Gagné	Lineman	"	70 00	
G. M. Swan	Operator	Hazelton	100 00	
E. R. Cox	"	"	100 00	
J. C. K. Sealy	Lineman	"	75 00	
E. E. Charleson	Line F'man & storekeeper	"	150 00	
J. D. Charleson	Asst. storekeeper	"	75 00	
H. A. Cullen	Operator	1st Cabin	75 00	
G. T. Brown	"	Kuldo	75 00	
G. T. Carpenter	Lineman	"	70 00	
Chas. Martin	Operator	3rd Cabin	75 00	
H. P. Travis	"	4th "	75 00	
J. McMenamin	Lineman	4th "	70 00	
E. A. Hawley	Operator	5th "	100 00	
C. Loucks	Lineman	5th "	90 00	
J. Muir	Operator	6th "	100 00	
W. Ross	Lineman	6th "	90 00	
J. D. McIntosh	Operator	7th "	100 00	
Geo. Smith	Lineman	7th "	90 00	
J. Mooney	Operator	8th "	100 00	
G. Duhamel	Lineman	8th "	90 00	
J. Wiggins	Operator	9th "	100 00	
G. Hill	Lineman	9th "	90 00	
J. Berlinguet	Operator	Echo Lake	100 00	
H. Moore	Lineman	"	90 00	
R. Barton	Operator	25 Mile Cabin	100 00	
J. W. Hovey	Lineman	25 "	90 00	
J. A. Watts	Operator	Iskoot	100 00	
W. Warnock	Lineman	"	90 00	
W. T. Patterson	"	Sheep Creek	75 00	
F. N. Jackson	"	"	75 00	

ies of employees and monthly salaries Yukon Telegraph Service, which includes Port Simpson-Hazelton, Lillooet and Horse Fly Branches.

(As submitted in a report bearing date December 19, 1902).

Name.	Capacity.	Where Employed.	Amount.	Remarks.
			$ cts.	
. Taylor	Operator	Telegraph Creek	100 00	
ohnson	Lineman	" "	75 00	
. Charleson	Line f'man & storekeeper	" "	150 00	
aoust	Operator	Shesley	82 50	
es Craig	Lineman	"	75 00	
. Gillespie	Operator	Nahlin	82 50	
es Murie	Lineman	"	75 00	
. Hail	Operator	Nakina	82 50	
glas Potts	Lineman	"	75 00	
. Goodfellow	Operator	Pike River	82 50	
uston	Lineman	"	75 00	
rt Simpson Branch.				
omlinson	Operator	Meanshinisht	50 00	
omlinson	Lineman	"	75 00	
. Boss	Operator	Skeena Canyon	75 00	
. Davis	Lineman	"	70 00	
Clark	Operator	Telegraph Point	75 00	
terson	Lineman	"	70 00	
Coutu	Operator	Aberdeen	75 00	
V. O'Neil	"	Port Simpson	50 00	
Lawrence	Lineman	Atlin	75 00	
. Goodfellow	Operator	"	100 00	
ronach	"	Centre Cabin	82 50	
. Dowling	Circuit Mangr	Atlin	116 66	
. Chambers	Operator	Caribou Crossing	82 50	
. Grimes	"	Tagish	82 50	
. Macdonald	Lineman	"	75 00	
Clegg	Dist. Supt	White Horse	175 00	
ilchen	Storekeeper	"	150 00	
Champagne	Clerk	"	112 00	
Fleming	Agent	"	115 00	
. Marshall	Lineman	"	75 00	
hadwell	Messenger	"	25 00	
Jeffries	Cook & housekeeper	"	75 00	
ope	Operator	Lower Leberge	82 50	
. Brown	Lineman	"	75 00	
inet	Operator	Hootalinqua	82 50	
. Graham	"	Big Salmon	82 50	
okken	Lineman	"	75 00	
. Lanktree	Operator	Five Fingers	82 50	
. Lanktree	Lineman	"	75 00	
. MacLachlin	Operator	Fork Selkirk	82 50	
mith	Lineman	"	75 00	
eter	Operator	Selwyn	82 50	
Wridgeway	Lineman	"	75 00	
ymore	Operator	Stewart River	82 50	
Beausoleil	"	Ogilvie	82 50	
chlin	Lineman	"	75 00	
rownlow	Manager	Dawson	150 00	
anley	Operator	"	125 00	
outure	Foreman	"	125 00	
. MacKenzie	Operator	"	125 00	
. MacDonald	Clerk	"	100 00	
D. Hunt	Cook & housekeeper	"	100 00	
loes	Messenger	"	93 00	
leloche	Lineman	"	80 00	
. McCraken	Operator	Forty Mile	82 50	
W. Boyd	Lineman	"	75 00	
V. Crean	Superintendent	Vancouver	208 16	
Healy	Clerk	"	140 00	
. Abbott	Stenographer	"	65 00	
. Phelan	Dist. Sup't	Ashcroft	175 00	
			10,440 01	

* $85 per month. †$70 per month. ‡$70 per month.

A table of distances between Offices and Testing Stations will be found at the end of the appended sheets.

Line from Meat Cove, C.B., N.S., to St. Paul's Island—Local rate between offic Meat Cove line and St. Paul's 50-2 (1 office).

St. Paul's Island Lt. House 50-2 from North Sydney, N.S., W. U. office.

Line from Quebec to Grosse Isle Quarantine Station (7 offices)—Local rates bet offices on Orleans Island and Isle Réaux 15-1; on Orleans Island, Isle Réaux Quebec 15-1; on Orleans Island and Grosse Isle 25-1; on Isle Réaux and G Isle 15-1.

St. Pierre, Orléans Island	Through rate	15-1	from Quebec, G. N. W.	off
Ste. Pétronille	"		"	"
St. Laurent	"		"	"
St. Jean	"		"	"
St. François	"		"	"
Isle Réaux	"		"	"
Grosse Isle	"	25-1	"	"

Line from Baie St. Paul to Chicoutimi (7 offices).

For business with offices west of Baie St. Paul and terminating at Quebec 15c. and 1c. to the government line tariff.

For business with offices west of Baie St. Paul, beyond Quebec, add the full of the Great North-Western Telegraph Company to the government line tariff.

Line from Murray Bay to Chateau Bay (48 offices) with branch to Anticosti a extension to Belle Isle.

For business with offices west of Murray Bay and terminating at Quebec, add and 1c. to the government line tariff.

For business with offices west of Murray Bay, beyond Quebec, add the full ra the Great North-Western Telegraph Company to the government line tariff.

Local rates between offices not more than 100 miles apart 15-1; more than 100 apart 25-1; on mainland and Anticosti 50-2; and on mainland and Belle Isle

St. Urbain	15-1	from Baie St. Paul (Ck. Que.)	G. N. W.	
Lacruche	"		"	"
St. Alexis	"		"	"
L'Anse St. Jean	"		"	"
St. Alphonse de Bagotville	"		"	"
Chicoutimi	"		"	"
Cap à l'Aigle	15-1	from Murray Bay (Ck. Que.)	G. N. W.	
Ste. Fidèle	"		"	"
Port au Persil	"		"	"
St. Siméon	"		"	"
Baie des Rochers	"		"	"
Rivière aux Canards	"		"	"
St. Etienne	"		"	"
Tadousac	"		"	"
Bergeronnes	"		"	"
Escoumains	"		"	"
Baie des Bacons	"		"	"
Mille Vaches	25-1		"	"
Portneuf Mills	"		"	"
Portneuf Light	"		"	"
Sault au Cochon	"		"	"
Betsiamis (Bersimis)	"		"	"

SIONAL PAPER No. 19

couagan (Pt. Outardes).	25-1 from	Murray Bay (Ck. Que.)	G. N. W. office.
gall's Mills	"	"	"
Godbout	"	"	"
e des Monts	"	"	"
ty Bay, West	"	"	"
ty Bay, East	"	"	"
ou Islands	"	"	"
sh Point	"	"	"
cost	"	"	"
Marguerite	"	"	"
City	"	"	"
Islands	"	"	"
Moisie	"	"	"
River	"	"	"
rake	"	"	"
der River	"	"	"
ie	"	"	"
hn River	"	"	"
Point	"	"	"
an	"	"	"
Esquimaux	"	"	"
ouanes	"	"	"
e Bay	"	"	"
hou	"	"	"
aus	"	"	"
hquan	"	"	"
ka	"	"	"
aro	"	"	"
Romaine	"	"	"
Bay	"	"	"
e du Maurier	"	"	"
ngton	"	"	"
e Head	"	"	"
des Moutons	"	"	"
e Ha	"	"	"
ugustin	"	"	"
i	"	"	"
y Bay	"	"	"
aul River	"	"	"
r Bay	"	"	"
e Espérance (St. Paul's		"	"
iver)	"	"	"
au Bay	"	"	"
e Amour	"	"	"
Bay	"	"	"
au Bay	"	"	"
Isle	50-2 "	"	"
osti Id. via Long Point.			

ONTARIO.

from Leamington to Pelee Island (Telephone Circuit)—Local rates between Leamington and Point Pelee 15-1; mainland and Island offices 25-1; offices on the Island 15-1 (8 offices).

Club House, mainland	15-1 (thro' business) from	Leamington,	G. N. W.
e Pelee, mainland	"	"	"
ington Dock	"	"	"
Pt. Lt. H'se, Pelee Island	"	"	"
Dock, Pelee Island	"	"	"
tyre's Corners	"	"	"
Dock, Pelee Island	"	"	"
Dock	"	"	"

NORTH-WEST TERRITORIES.

Line from Qu'Appelle (C.P.R. Sta.) to Edmonton, Alberta—Local rates, 15-1, 25-2, for distances 10 to 600 miles (13 offices).

Fort Qu'Appelle	25-2	Qu'Appelle	or Saskatoon.
Touchwood		"	"
Saskatoon (Ts. office C. P. R. Tel.)		"	"
Henrietta		"	"
Battleford		"	"
Bressaylor	25-2	Saskatoon ; 50-3	Qu'Appelle or Edmonton.
Onion Lake	"	"	
Moose	"	"	
St. Paul de Métis	50-3	Saskatoon,	Qu'Appelle or Edmonton.
Saddle Lake	"	"	
Victoria	25-2	Edmonton ; 50-3	Qu'Appelle or Saskatoon.
Star	"	"	
Fort Saskatchewan	"	"	
Edmonton (Transfer office C. P.R. Tel.)	"	"	

Line from Moosejaw (C. P. Stn.) to Wood Mountain—Local rates 25-2 (1 off

Wood Mountain	25-2	from Moosejaw.

BRITISH COLUMBIA.

Line from Victoria to Cape Beale—Local rate 50-3 (6 offices).

Sooke	50-3	from	Victoria C. P. R. Tel. office.
Otter Point		"	"
Jordan River		"	"
Port San Juan		"	"
Carmanah Lt. House		"	"
Cape Beale		"	"

Line from Nanaimo to Comox—Local rate 25-2 (9 offices).

Wellington (C.P.R. & E. & N. Ry.)	25-2	from	Nanaimo.
Parksville		"	or Wellington.
Fanny Bay		"	"
Cumberland		"	"
Union Bay		"	"
Union Mines		"	"
Courtney		"	"
Comox		"	"
Alberni (branch)		"	"

Line from Alberni to Cape Beale—Local rate 50-3.

Between offices on the Victoria-Cape Beale line and the Nanaimo-Comox line, Alberni, 50-3.

Line from Golden to Windermere—Local rate 25-2 (3 offices).

1. Athalmer	25-2	from	Golden (C.P.Ry.)
2. Wilmer		"	
3. Windermere		"	

Line from Kamloops to Lower Nicola (Telephone) (8 offices).

Connections are leased and lessees allowed commission on messages of non-scribers. Tariff 25-2 local and from Kamloops.

YUKON TELEGRAPH LINE.

THROUGH TARIFF TO AND FROM ASHCROFT.

(IN EFFECT FROM JUNE 1, 1902.)

Names of Offices. (June 13, 1903.)	Line Mileage. Intermediate.	Line Mileage. Progressive.	Tariff. $ cts.	Night Rate.
shcroft	0	0	0	
Pavilion. Branch from Ashcroft	40	40	25 & 2	25 & 1
Lillooet. Branch from Ashcroft	22	62	25 & 2	25 & 1
linton	30	30	25 & 2	25 & 1
5 Mile House	55	85	25 & 2	25 & 1
50 Mile House	35	120	50 & 3	30 & 2
Harpers' Camp. Branch from 150-Mile House	33	153	50 & 3	30 & 2
Bullion. Branch from 150-Mile House	27	180	50 & 3	
Quesnel Forks. Branch from 150-Mile House	4	184	50 & 3	3 & 2
oda Creek	42	162	50 & 3	30 & 2
lexandria	28	190	50 & 3	
uesnel	26	216	50 & 3	30 & 2
Barkerville (branch from Quesnel)	61	277	50 & 3	
efuge House	16	232		
lead River Refuge House	15	247		
Blackwater	22	269	75 & 5	
Shovel Creek R. House	20	289		
Bob Tail Creek	25	314	75 & 5	
Refuge House	17	331		
Stoney Creek	18	349	75 & 5	
Refuge House	17	366		
Fraser Lake	18	384	75 & 5	
Stella Refuge House	20	404		
Shoal Creek R. House	20	424		
Burns Lake	29	453	75 & 5	
Refuge House	15	468		
South Buckley	15	483	75 & 5	
North Buckley	25	508	100 & 7	
Buckley Ranch	27	535	100 & 7	
Mauricetown	35	570	125 & 10	
Hazleton	40	610	125 & 10	
Meanskinisht. Branch from Hazleton	35	645	125 & 10	
Skeena Canyon. Branch from Hazleton	47	692	125 & 10	
Lorne Creek. Branch from Hazleton	24	716	125 & 10	
Telegraph Point. Branch from Hazleton	53	769	150 & 10	
Aberdeen. Branch from Hazleton	4½	773½	150 & 10	
Port Simpson. Branch from Hazleton	39	812½	150 & 10	
1st Cabin	27	637		
Kuldo	28	665	125 & 10	
3rd Cabin	25	690		
4th Cabin	20	710		
5th Cabin	20	730		
6th Cabin	20	750		
7th Cabin	19	769		
8th Cabin	19	788		
9th Cabin	17	805		
Refuge House	17	822		

No night rates beyond Quesnelle.

YUKON TELEGRAPH LINE—*Concluded.*

THROUGH TARIFF TO AND FROM ASHCROFT.

(IN EFFECT FROM JUNE 1, 1902.)

No.	Names of Offices.	Line Mileage.		Tariff.	
		Intermediate.	Progressive.	$ cts.	Night R
31	Echo Lake	15	837	150 & 10	
	Refuge House	4	841		
	25-Mile Cabin	21	862		
32	Iskoot	16	878	150 & 10	
	Refuge House	20	898		
33	Sheep Creek	20	918	175 & 10	
34	Telegraph Creek	21	939	175 & 10	
	Tahltan Refuge House	25	964		
35	Shesley	20	984	175 & 10	
	Dudadoptu Refuge House	18	1,002		
	80-Mile Coast R. House	25	1,027		
36	Nahlin	18	1,045	185 & 10	
	Refuge House (North Branch)	26	1,071		
37	Nakeena	23	1,094	185 & 10	
	Table Creek Refuge House	20	1,114		
	Pike Lake	10	1,124		
38	Pike River	10	1,134	200 & 15	
39	Atlin	23	1,157	200 & 15	
	Refuge House	15	1,172		
	Center Cabin	20	1,192		
	Refuge House	20	1,212		
40	Tagish	20	1,232	225 & 15	
41	Cariboo Crossing (Branch from Tagish)	18	1,250	225 & 15	
42	White Horse	65	1,297	250 & 15	
43	Lower Lebarge	59	1,356	250 & 15	
44	Hootalinqua	30	1,386	250 & 15	
45	Big Salmon	34	1,420	250 & 15	
	Tantalus Refuge House	66	1,486		
46	Five Fingers	30	1,516	275 & 15	
47	Fort Selkirk	58	1,574	275 & 15	
48	Selwyn	30	1,604	275 & 15	
49	Stewart River	75	1,679	300 & 20	
50	Ogilvie	23	1,702	300 & 20	
51	Dawson	48	1,750	300 & 20	
52	Forty Mile	55	1,805	325 & 20	
53	Boundary (Fort Egberton)	40	1,845	325 & 20	
	Add Branch lines in list	.....	407½		
	Total miles	.....	2,252½		

No night rates beyond Quesnel.

The names of places in the above list not numbered are testing stations and shel huts for linemen.

The rates given above for points north of Quesnel are one-third less than th primarily adopted, which were calculated on the general basis of 50 cents for 100 mi and 25 cents for each additional 100 miles, counting the distance from Ashcroft.

The local rates between offices north of Quesnel are calculated on the basis of cents for 100 miles and 25 cents for each additional 100 miles, and the local ra between offices north of Atlin are fixed at 50 cents for each 100 miles.

Cable messages.—On transatlantic business the word rate is twice as much as additional word rate given in the list for all points north of Ashcroft:—Barkervi $3 \times 2 = 6$c.; Dawson, $20 \times 2 = 40$c. per word.

On trans-Pacific business the word rate is the additional word rate plus 4c.: Barkle, 3 + 4 = 7c.; Dawson, 20 + 4 = 24c. per word to or from Ashcroft.

SUMMARY.

Offices on government lines, as listed	244
Offices at transfer points with connecting lines	15
Total number embraced by the service	259

PART VI

REPORT OF THE COLLECTOR OF REVENUE

DEPARTMENT OF PUBLIC WORKS

1902-1903

COLLECTION OF REVENUE.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, November 14, 1903.

ELINAS, Esq.,
Secretary, Department of Public Works,
Ottawa.

SIR,—I have the honour of submitting my report for the year ended June 30,

I have examined the books and accounts of all the officers under my control (ex-ing those of the Dock Master at Esquimalt), and it is my pleasing duty to state in all cases the rules laid down for their guidance by the department have been fully observed by these officers, who have faithfully accounted for all the revenues ected by them.

During the past fiscal year the revenue accrued from public works shows an in-se of $36,386.82 compared with the year 1901-2; the total amounting to $128,457.63, nst $92,070.81 in 1901-2.

The collections also show an increase of $32,556.57, being in all $127,988.13.

The revenue from slides and booms was $77,992.48, or $24,017.30 more than the accrued in 1901-2. The collections amounted to $77,522.98, or $20,187.05 more the previous year. Overcharges amounting to $313.43 were written off, and the unt outstanding uncollected June 30 last increased by $156.07.

The graving docks yielded $45,877.08, or $8,528.10 more than in 1901-2.

From the locks the receipts were $638.06, an increase of $92.41.

From rents the revenue was $3,950.01, being $3,749.01 more than the preceding

Having dealt with the revenue in a general way, I beg to submit the particulars etail relating to the several services, under their respective heads.

SLIDES AND BOOMS.

OTTAWA DISTRICT.

The tolls charged up amounted to $46,337.38, or $8,414.15 more than in 1901-2.

The number of sawlogs that passed through the works was 4,064,607, or 776,870 e than the preceding year.

Of square timber, there were 18,442 pieces, against 15,884 in 1901-2. All the enue accrued in this district during the year just closed was collected, excepting 13.43 overcharges written off.

Of the dues accrued since July 1, 1889, when this department took over the col-ion, there remains uncollected $9,836.30, full particulars of which will be found statement No. 2 herewith.

Of the dues accrued prior to July 1, 1889, there remains uncollected $56,805.65, of which should be written off. See statements Nos. 1 and 3 herewith for details.

The accounts for the Ottawa district stand thus :—

Dues accrued during the year 1902-03		$46,337 38
Of which there was written off.	$ 313 43	
Collected.	46,023 95	
		46,337 38

The amount outstanding uncollected is the same as at the close of the prev year, the amount, year by year, being as follows:—

Dues accrued prior to the collection being transferred to this department.		$56,805 65
Dues of 1889-90.	$6,903 05	
" 1890-91.	28 42	
" 1892-93.	379 80	
" 1896-97.	196 71	
" 1900-01.	2,328 32	
		9,836 30

I would again ask particular attention to the fact, that since this departi assumed the collection of these dues, of the amount accrued, viz., $754,160.59, all $28.42 absolutely owing to the department has been collected; the remainder a shown and aggregating $9,807.88, being composed of Chaudiere boomage $6,90 which should have been written off long ago, and the balance being covered by cou claims which, if my information be correct with regard to them, ought to be allo

Herewith are statements in detail:—

No. 1.—Statement of amounts outstanding prior to July 1, 1889 uncollected tember 30, 1903.

No. 2.—Statement of dues accrued at Ottawa since July 1, 1889, uncollected tember, 1903.

No. 3.—Statement of amounts accrued at Quebec prior to July 1, 1889, uncoll September 30, 1903.

No. 4.—Statement of the number of pieces of square timber, sawlogs, &c., w passed through the Ottawa works during the year ended June 30, 1903.

No. 5.—Statement of dues accrued from each of the slides and works in the Ot district during the year ended June 30, 1903.

The satisfactory increase in the revenue from this particular district does arise from extraordinary operations on any particular stream, but was almost a ge advance, for only on two streams, viz., the Rivers Madawaska and Dumoine, wher tolls were less than the preceding year, the Madawaska being $855.85, and the Dum $122.07 smaller than 1901-02.

Nevertheless the revenue was nearly $3,000 short of the estimated income the present tariff was imposed, but this can I think be attributed to the large nu of small logs now taken out which a few years ago would not be brought down.

Before closing these remarks on the Ottawa district, I would again respect urge the desirability of having the question of the arrears appearing as uncolle brought before the Public Accounts Committee, not only for the Ottawa district those from the other districts as well, so as to obtain the authority of parliame write them off, as they are a source of friction between the government and the viduals interested, frequently preventing settlement of accounts justly due indivi while the amounts standing against them should have been written off long ago.

ST. MAURICE DISTRICT.

The revenue from this district was $29,232.33, more than the preceding ye $15,666.85.

The number of pieces of timber of all kinds which passed through the w was 2,[illegible]38 pieces, and 140 cords of pulp wood.

All the dues of 1902-03 were collected. Since I took charge of this district, in , all the revenue accrued has been collected.

The amount outstanding remains the same as at the close of the preceding year, June 30, 1902, namely, $14,481.49, all of which should be written off for reasons ned in Statement No. 6 herewith.

The spring of 1903 was a most remarkable one for this district, there being no until the beginning of June; in consequence the water in the St. Maurice was low, and up to that time it seemed as if the bulk of the logs would not come down, ever, when the rains set in, the water rose satisfactorily and kept at a fair level ummer, thus most of the logs were gotten out.

Those which were left behind in the tributaries will, under ordinary circumstances, erfectly safe next spring.

Although there was no freshet on the St. Maurice this spring, I would again urge, ew of the magnitude of the interests involved, the providing in the near future of eans of retaining the waters of the great lakes at its head in the early spring ths, and so preventing such disastrous floods as have occurred in the past whereby nly the lumbermen suffered great loss of property, but the government also through orks being carried away or damaged lost heavily, even in recent years. With such stem for retaining the water in the spring, the supply during the dry months of ummer could be regulated and much of the difficulties experienced in recent years. ot overcome, at least be modified to a great extent, as the forests are being denuded apidly, the snow melts more quickly than formerly in the spring, the water so tting together with the usual spring rains coming all at once, form a flood that is y to be greater every year as time goes on.

The department is interested in a very great degree in devising such a system uggested, having such large sums invested in the works on the St. Maurice, and over if the logs are not prevented from going into the St. Lawrence, not only the erman is the loser, but the government is deprived of the revenue which it would rwise have derived from the timber.

Such a scheme, if my information is to be relied on, would not cost a very large ,in comparison with the interests involved, and I feel confident that not only the ermen but the manufacturers whose mills are driven by water, would gladly con- ute to its cost and maintenance, while the provincial government might also be d to assist.

I may say here that lest anyone might be carried away by an exaggerated idea uantity, when the millions of logs taken out on the St. Maurice are mentioned, the vast majority of the logs are spruce and a very great portion of them are very l, as they take for making pulp everything down to four inches at the top, in fact ve seen some as small as two inches.

NEWCASTLE DISTRICT.

The dues accrued from this district during the year amounted to $2,422.77, all of ch was collected but $156.07 due by Gilmour & Co.

The total outstanding uncollected on June 30, 1902, was $7,969.53, of which 21.19 should be written off in accordance with a judgment in the Exchequer Court; remainder consists of an account in the hands of the Department of Justice for ection and amount due by Gilmour & Co., to which is to be added the $156.07 above tioned.

With regard to the amount due by Gilmour & Co., I may say here, that they are in ty with another department of the government for the sale of certain properties ed by them which would be of very great use to the govrnment and settlement of account with this department is only waiting the decision as to this sale, whether urable or not.

GRAVING DOCKS.

ESQUIMALT GRAVING DOCK.

The revenue from this source, shown in detail in statement No. 8 herewith, $13,669, being $833.24 less than in 1901-2.

Of the 211½ days the dock was occupied during the year, it was used by the tish navy for 168½ days, Canadian government vessels for 6 days, while the merca marine used it for 37 days.

LEVIS GRAVING DOCK.

The revenue from this work was $5,891.90 more than for the previous year, b for 1902-3, $23,888.90. See statement No. 9 herewith.

The dock was occupied for 148 days, exclusive of the winter months, during w it was occupied by the steamship *'Iberian.'*

KINGSTON GRAVING DOCK.

The dock was occupied for 123 days, exclusive of winter months. The inc was for the past year, $8,319.18, or $3,469.44 more than the previous year. See st ment No. 10.

LOCKS.

By Order in Council of July 28, 1903, the tolls on the locks were abolished two years, and all tolls collected since the beginning of the season of navigatio this year directed to be refunded.

RIVIÈRE DU LIÈVRE LOCK.

The tolls collected amounted to $279.78, being 34 cents more than last year.

Of this amount, $132.37 was refunded under the Order in Council above refe to.

RIVIÈRE YAMASKA LOCK.

The receipts from this source were $358.28, or $92.07 more than the previous y Of this, $118.93 were refunded under the authority above quoted.

RENTS.

The collections on this account were as follows:—

From old Post Office Building, Victoria, B.C.	$3,792 01
Old Post Office Building, St. John, N.B.	150 00
Edmonton Bridge (5 years)	5 00
Water lot, Port Morien, N.S.	1 00
Part Toronto Island	1 00
Land in Kingston, Ont.	1 00
	$3,950 01

Thus the total revenue that passed through my hands during the year ended e 30, 1903, may be summarized as follows:—

From Slides and Booms	$77,522 98
Graving Docks	45,877 08
Locks	638 06
Rents	3,950 01
	$,127,988.13

The following comparative table of Public Works revenue accrued 1902-3 and -2 shows at a glance in what accounts the increases and decreases herein referred ccurred:—

—	Year. 1902-03	Year. 1901-02	Increase. 1902-03	Decrease. 1902-03
SLIDES AND BOOMS.	$ cts.	$ cts.	$ cts.	$ cts.
a District	46,337 38	37,923 23	8,414 15	.....
aurice District	29,232 33	13,565 48	15,666 85	.....
astle District	2,422 77	2,486 47	.....	63 70
	77,992 48	53,975 18	24,081 00	63 70
Net increase, 1902-03	.....	.....	24,017 30	.....
GRAVING DOCKS.				
malt, B. C.	13,669 00	14,502 24	.....	833 24
Que	23,888 90	17,997 00	5,891 90	.....
ton, Ont.	8,319 18	4,849 74	3,469 44	.....
	45,877 08	37,348 98	9,361 34	833 24
Net increase, 1902-03	.....	.....	8,528 10	.....
LOCKS.				
re du Lièvre	279 78	279 44	34	.....
re Yamaska	358 28	266 21	92 07	.....
	638 06	545 65	92 41	.....
Rents	3,950 01	201 00	3,749 01	.....

In conclusion, I have to acknowledge the uniform courtesy and cheerful assis- e accorded me at all times by the officers with whom I have been brought in con- during the year.

I have the honour to be, respectfully, sir,
Your very obedient servant,
EDWARD T. SMITH,
Collector of Public Works Revenue.

No. 1.—STATEMENT of Slidage and Boomage from the Ottawa Slides and Works, accrued prior to July 1, 1889, Outstanding June 30, 1903, and remaining uncollected on September 30, 1903.

By Whom due.	Bad and Doubtful Debts.	Chaudière Boomage in Suspense.	Other Slide and Boom Dues Disputed.	Total Outstanding on Sept. 30, 1902.	Year to which Dues Belong.	Remarks.
	$ cts.	$ cts.	$ cts.	$ cts.		
John & Wm. McLean	53 14			53 14	1873	Insolvent.
John Rowan	342 50			342 50	1872-1873	"
Lemieux & Charette	21 30			21 30	1873	"
Taillon & Lapierre	148 10			148 10	1873-1874	"
Mosgrove & McHarry	261 42			261 42	1873-1874	"
W. C. Wells	600 90			600 90	1873-1874	"
Dufresne & McGarity	528 80			528 80	1874-1875	"
Walton Smith	171 46			171 46	1874-1875	"
A. H. Baldwin	3,507 92			3,507 92	1871 to 1874	"
Hon. James Skead	9,807 65			9,807 65	1861, 1863, 1864, 1869, 1875 to 1878	"
Batson & Currier	5,558 70			5,558 70	1875 to 1877	"
A. F. A. Knight	546 30			546 30	1878	"
James Walker	11 25			11 25	1877	"
R. Campbell & Son	1,558 50			1,558 50	1879 to 1881	"
James G. Bryson	73 50			73 50	1886	"
Costello Bros	90 62			90 62	1882	"
N. E. Cormier	428 34			428 34	1888	"
James Yuill	9 29			9 29	1876	Overcharge.
J. & B. Grier	76 84			76 84	1883	"
R. & W. Conroy	95 42			95 42	1882-1883	" reported in return S—38, for March, 1886.
A. & P. White	101 00			101 00	1881	"
B. Caldwell & Son	4 33			4 33	1887	"
J. R. Booth		9,871 93	398 88	10,270 81	1881 to 1888	$398.88, counter claim for damages by the breaking of Coulonge Boom.
Perley & Pattee		8,889 85		8,889 85	1881 to 1888	
The Bronsons & Weston Lumber Co.		8,180 79		8,180 79	1881 to 1888	
Pierce & Co		462 18		462 18	1888	
G. A. Grier & Co		1,060 59		1,060 59	1886-1887	*Chaudière boomage. These parties claim that they have maintained these works wholly at their own expense since 1881.
Estate late Levi Young		1,461 20		1,461 20	1881 to 1885	
Wm. Mason		413 85		413 85	1881 to 1888	

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1903.

EDWARD T. SMITH,
Collector of Slide and Boom Dues.

No. 2—STATEMENT of Slide and Boom Dues, accrued from the Ottawa River Works since July 1, 1889, Outstanding on September 30, 1903.

Name.	Year to which Dues belong.	Chaudière Boomage in Suspense.	Ordinary Dues.	Total Outstanding	Remarks.
		$ cts.	$ cts.	$ cts.	
J. R. Booth	1889-90	2,561 69		2,561 69	Chaudière Boomage reported to Council, and referred to the Treasury Board, should be written off.
The Bronsons & Weston L. Co.	1889-90	2,056 96		2,056 96	
Perley & Pattee	1889-90	1,203 26		1,203 26	
Wm. Mason & Sons	1889-90	167 66		167 66	
Pierce & Co	1889-90	913 48		913 48	
Alex. Fraser acc. Thos. Stephens.	1890-91		28 42	28 42	Legal action taken to recover this.
J. R. Booth	1892-93		379 80	379 80	Retained by Mr. Booth in settlement of an account due him which the Auditor General refuses to pay, as Mr. Booth appears to be in arrears in this and Statement No. 1.
Bryson & Fraser	1896		196 71	196 71	Have counter claim for work done on slide to this amount.
McLachlin Bros	1900		2,328 32	2,328 32	Have counter claim for damages to logs in consequence of break in Black River slide.
		6,903 05	2,933 35	9,836 30	

EDWARD T. SMITH,
Collector of Slide and Boom Dues.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1903.

No. 3.—STATEMENT of Outstanding Slide Dues, Ottawa District, Bonds for which sent to Quebec for Collection.

Name.	From 1860.	From 1861.	Tot
	$ cts.	$ cts.	$
Hon. James Skead	245 00	210 00	45
James Mair.....	.....	696 75	69
	245 00	906 75	1,15

These amounts were uncollected, as the parties claimed damages for loss ca by the Madawaska boom breaking in 1860.

A decision on their claims was not arrived at till August 2, 1869. On the idem Messrs. Skead and Mair were notified that the department could not recog their claim.

To the best of my knowledge, this decision was never communicated to the lector of slide dues, consequently these accounts remained in abeyance.

Since then both parties died, and I believe both were insolvent at the tim their death.

EDWARD T. SMITH,
Collector of Slide and Boom Dues.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1903.

No. 4.—Statement of the number of pieces of square timber, saw logs, &c., passed through the government slides and works on the River Ottawa and its tr taries during the fiscal year ended June 30, 1903.

	Pieces.
Square timber..	18,442
Saw logs..	4,064,607
Boom and dimension timber	93,045
Cedars..	85,125
Railroad ties	606,938
Fence posts	247,154
Total..	5,115,311

Also 25,743¼ cords pulp wood and 8 scows. Revenue accrued on above $46,337.38.

EDWARD T. SMITH,
Collector of Slide and Boom Dues.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1903.

No. 5.—Statement showing the dues accrued on the undermentioned works on the r Ottawa and its tributaries during the fiscal year ended June 30, 1903.

River or other Improvement.	Amount.
Main Ottawa	$ 5,203 90
Chenevaux boom	7,191 57
River Petewawe	8,368 38
" Madawaska	2,958 89
" Coulonge	8,653 96
" Dumoine	316 87
Black river	4,888 28
Gatineau	8,755 53
	$46,337 38

EDWARD T. SMITH,
Collector of Slide and Boom Dues.

ARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1903.

6.—STATEMENT of Slide and Boom Dues from the St. Maurice Slides and Works outstanding on June 30, 1903, and remaining uncollected on September 30, 1903.

Name.	Year to which Dues belong.	Amount.	Total.	Remarks.
		$ cts.	$ cts.	
e Baptist, Son & Co.	1878	469 95		
"	1879	2,110 62		
"	1880	1,696 18		
"	1881	293 69		Have counter claims for damages to logs caused by the booms not being stretched early enough in the spring of 1878 to prevent the logs going over the chutes.
"	1882	165 80		
"	1884	118 50		
"	1888	4 28		
			4,859 02	These claims were submitted to Special Commissioner, Mr. McDougall, afterwards Judge, who, after hearing the evidence on both sides, recommended that the claims of the parties should be allowed.
Ritchie & Co	1878	3,072 84		
"	1883	2,173 68		
"	1884	28 96		
"	1886	1 62		
"	1887	4 38		
			5,281 48	
Baptist	1879		2,116 96	
Ritchie & Co.	1888	779 24		
"	1889	332 11		
			1,111 35	Of this amount, $754.20 is claimed to be an overcharge. Insolvent.
e Bros	1886	413 43		
"	1887	634 71		
			1,048 14	This amount is composed of overcharges in 1886 and 1887 of $842.76 and overpayment in 1884 of $205.38.
Hall	1890		49 34	Insolvent.
Normand	1890		42 28	Claims that this balance is an overcharge.
Biron	1891		0 92	Would cost more to collect than it is worth.
			14,481 49	

o make this balance agree with the Public Accounts, there should be deducted $7.93 over credited Baptist, and $217.17 added thereto, being $190.40 paid July 23, 1884, and $26.77 over charged in o Wm. Little, not in any of the collector's returns, which will give balance due September 30, 1894, ,690.73.

EDWARD T. SMITH,
Collector of Slide and Boom Dues.

RTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1903.

No. 7.—STATEMENT of Slide and Boom Dues accrued from the Newcastle and Tr River Works, outstanding on June 30, 1903, and remaining uncollected on Septe ber, 30 1903.

Name.	Year to which Dues belong.	Amounts disputed.	Ordinary Dues.	Total.	Remarks.
		$ cts.	$ cts.	$ cts.	
Irwin & Boyd	1881	59 79		59 79	
Thomson & McArthur.	1880	52 78		52 78	
Jabez Thurston	1882	12 50		12 50	
McDougall & Ludgate.	1879	65 07		65 07	Insolvent.
Bigelow & Trounce	1882 to 1885	216 21		216 21	
R. G. Strickland	1882, '83, '85, '86 and '87	215 08		215 08	
Est. late Geo. Hilliard.	1877 to 1883 and 1886	354 15		354 15	Dead and estate tributed.
T. G. Hazlett	1881, '82, '84 to '89	885 25		885 25	
J. M. Irwin	1882, '83, '85 to '88	698 45		698 45	According to ju ment in Exche
D. Ullyott	1881 to 1887	547 68		547 68	
Green & Ellis	1881 to '83, '85, '88 and '89	157 01		157 01	Court, *re* Boy
A. W. Parkin	1884, '85, '88, '90 and 91	65 92		65 92	Smith, these
The Dickson Estate	1883	137 50		137 50	not be collecte
Alfred McDonald	1888	40 80		40 80	
John Parkin	1889	13 00		13 00	
Gilmour & Co	1893, '94, '95, 1900, '01, '02		4,568 71	4,568 71	Sent to Dept. of
John Dovey	1894, '95, '96		35 70	35 70	tice for collecti
		3,521 19	4,604 41	8,125 60	

EDWARD T. SMITH,
Collector of Slide and Boom Dues.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1902.

No. 8.—THE DRY DOCK AT ESQUIMALT, B.C.

TEMENT of Dues and other charges collected during the Year ended June 30, 1903.

Name of Vessel Docked.	Tonnage.	Period of Dockage. From	To	Dockage Charges.	Other Charges.	Total.
		1902.	1902.	$ cts.	$ cts.	$ cts.
.S. Phaeton	4,300	June 30	July 4	211 40		211 40
Arab	4,248	July 16	" 18	650 00		650 00
Servia	1,867	" 19	" 23	692 00		692 00
ne Railway Company		9,000 galls. water at 60c. per mill.			5 40	5 40
Stevedoriug Company		7,000 galls. water at 60c. per mill.			4 20	4 20
.S. Virago	265	July 28	Aug. 4	324 31		324 31
.S. Sparrowhawk	265	" 28	" 4			
Lyra	4,417	Aug. 11	" 13	529 00		529 00
.S. Amphion	4,300	" 13	Oct. 23	2,686 25		2,686 25
.S. Shearwater	980	Oct. 24	" 27	142 06		142 06
.S. Grafton	7,500	" 27	Nov. 7	446 30		446 30
Edith	2,369	Dec. 1	Dec. 11	1,480 00	22 20	1,502 20
Stevedoring Company		7,800 galls. water at 60c. per mill.			4 68	4 68
Tacoma	2,811	Jan. 18	Jan. 19	400 00	3 60	403 60
.S. Virago	265	Jan. 21	Feb. 2	493 52		493 52
.S. Sparrowhawk	265					
.S. Egeria	940	Feb. 3	" 13	398 75		398 75
Alsternixe	3,045	Mar. 11	Mar. 26	1,814 00	6 60	1,820 60
.S. Amphion	4,300	" 26	April 3	302 01		302 01
.S. Virago	265	April 3	" 8	288 72		288 72
.S. Sparrowhawk	265					
.S. Grafton	7,500	April 16	May 3	690 55		690 55
.S. Shearwater	980	May 5	" 9	204 71		204 71
Ivanhoe	1,438	" 10	" 11	350 00	3 00	353 00
ity of Topeka	1,057	" 17	" 18	350 00	1 20	351 20
meer	907	" 21	" 23	347 50	2 40	349 90
uadra and scow	573	" 11	" 16	450 00		450 00
.S. Flora	4,360	June 11	June 19	364 58		364 58
		Overpaid		0 06		0 06
	59,442			13,615 72	53 28	13,669 00

EDWARD T. SMITH,
Collector of Public Works Revenue.

ARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1903.

No. 9.—THE DRY DOCK AT LÉVIS.

STATEMENT of Dues and other charges collected during the Year ended June 30, 19

Name of Vessel Docked.	Tonnage.	Period of Dockage.		Dockage Charges.	Other Charges.	Tota
		From	To			
		1902.	1902.	$ cts.	$ cts.	$
S.S. Sahara	4,089	June 29..	July 12..	1,913 14	23 75	1,93
S.S. Indiana	3,923	Entry fee.		200 00		20
"		July 13..	Sept. 8..	7,522 22	39 75	7,56
S.S. Minnewaska	5,270	Sept. 12..	Oct. 21..	6,260 60	20 00	6,28
S.S. Manchester Engineer	4,300	Entry fee.		200 00		20
"		Oct. 26..	Nov. 7..	1,832 00	20 00	1,85
S.S. Iberian		Entry fee.		200 00		20
"	5,223	Nov. 11...	Nov. 15..	817 84		81
"		Wintering to April 10,		3,316 90	20 00	3,33
		1903.	1903.			
Tug Frontenac and dredge Laurier	790					
S.S. Saguenay	992	April 14..	April 23..	655 50		65
"		Entry fee.		200 00		20
S.S. Protector		May 22..	May 29..	447 20		44
		Entry fee.		200 00		20
	24,587			23,765 40	123 50	23,88

EDWARD T. SMITH,
Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1903.

No. 10—THE DRY DOCK AT KINGSTON, ONT.

EMENT of Dues and Other Charges collected during the Year ending June 30, 1903.

Name of Vessel Docked.	Tonnage.	Period of Dockage. From.	Period of Dockage. To.	Dockage Charges.	Other Charges.	Total.
		1902.	1902.	$ cts.	$ cts.	$ cts.
amona	57	July 1..	July 2..	20 00		20 00
von	1,417	" 11..	" 12..	191 70	5 00	196 70
Augustus	802	" 15..	" 16..	140 70		140 70
dler	56	" 21..	" 22..	20 00		20 00
ecumseh	840	" 24..	" 26..	203 30		203 30
ohn Milne	109	Aug. 1..	Aug. 2..	21 80		21 80
E. Simon & Bro.	107	" 5..	" 6..	31 40		31 40
Cargo.	50					
ew York	295	" 11..	" 11..	69 50		69 50
Valencia	543	" 14..	" 16..	142 31		142 31
Vinifrid Plunkett	100	" 21..	" 22..	20 00		20 00
Donnelly	319	" 25..	" 26..	63 80		63 80
rge King Ben	145	" 28..	" 29..	29 00		29 00
Iary	62	Sept. 6..	Sept. 8..	40 00		40 00
New Island Wanderer	123	" 9..	" 10..	24 60		24 60
Ceylon	908	" 15..	" 17..	214 86		214 86
ake Michigan	588	Oct. 8..	Oct. 11..	215 12	18 00	233 12
Cargo.	100					
Hecla	1,110	" 13..	" 14..	161 00	5 00	166 00
ecumseh	840	" 16..	" 20..	320 90		320 90
Petrel	346	" 21..	" 23..	93 42		93 42
Neelon	291	" 24..	" 29..	129 50		129 50
rmstrong	181	" 29..	Nov. 1..	76 20	5 00	81 20
nternational	395	Nov. 3..	" 19..	476 60	10 00	486 60
Toledo	2,277	" 20..	" 27..	1,234 04		1,234 04
tug St. Paul and 2 scows..	45	Nov 27..	Dec. 17.	412 00	5 00	417 00
	160					
		1903.	1903.			
etrel	346	Mar. 26..	Mar. 27..	69 20	5 00	74 20
Augustus	802	" 30..	" 31..	130 20		130 20
Minnedosa	1,041	" 31..	April 1..	154 10		154 10
Marshall	755	April 2..	" 3..	125 50		125 50
lide	78	" 6..	" 7..	20 00		20 00
I. Stephenson	461	" 8..	" 10..	124 47		124 47
hicora	930	" 11..	" 14..	273 20	5 00	278 20
Hecla	1,110	" 14..	" 18..	394 10	15 00	409 10
letha	171	" 19..	" 19..	34 20		34 20
aspian	958	" 29..	May 2..	279 92		279 92
orth King	873	May 4..	" 8..	381 74		381 74
rin	651	" 8..	" 9..	115 10		115 10
urret Cape	1,827	" 9..	" 10..	243 20		243 20
Neelon	291	" 11..	" 12..	58 20		58 20
ohn Rugee	1,217	" 15..	" 18..	299 49	6 25	305 74
cout	180	" 20..	" 25..	106 00	10 00	116 00
Cornwall	586	" 29..	" 29..	108 60		108 60
ideau King	266	June 6..	June 7..	53 20		53 20
urret Crown	1,827	" 19..	" 24..	754 76		754 76
Iary	62	" 25..	" 27..	40 00		40 00
		1902.	1902.			
dcows	160	July 7..	July 10..	113 00		113 00
Totals	26,858			8,229 93	89 25	8,319 18

EDWARD T. SMITH,
Collector of Public Works Revenue.

ARTMENT OF PUBLIC WORKS,
Ottawa, September 30, 1903.

PART VII

MISCELLANEOUS

S OF PARLIAMENT, PASSED AT SESSION OF 1903, HAVING REFERENCE TO THIS DEPARTMENT.
TRACTS LET BY THE DEPARTMENT.
PERTY PURCHASED OR SOLD.
PERTY, LEASED TO OR BY THE DEPARTMENT.
ATOR'S REPORT, NATIONAL ART GALLERY.
ES OF CHIEF OFFICERS OF THE DEPARTMENT.
ES OF OFFICIALS EMPLOYED ON SLIDES AND BOOMS.
ES OF PERSONS EMPLOYED ON GRAVING DOCKS.
ES OF ENGINEERS, FIREMEN AND CARETAKERS OF PUBLIC UILDINGS.
THE OFFICIAL CORRESPONDENCE OF THE DEPARTMENT

FOR THE

FISCAL YEAR ENDED JUNE 30, 1903.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, December 5, 1903.

SIR,—I have the honour to send you herewith the following statements concerning e transactions of the department during the last fiscal year with respect to contracts d property, and which are required for insertion in the annual report, 1902-3, viz :—

No. 1.—Statement of contracts let by this department during the fiscal year ended ne 30 last.

No. 2.—Statement of property purchased and sold by this department during the me period.

No. 3.—Statement of property leased to and by the said department during the me period; and

No. 4.—A list of some of the Public Acts of the Parliament of Canada passed at e last session and Orders in Council having reference to the department.

I have the honour to be, sir,
Your obedient servant,

J. A. CHASSÉ,
Law Clerk.

ED. GELINAS, Esq.,
Secretary of the Department of Public Works,
Ottawa.

STATEMENTS

SHOWING

1ST.—CONTRACTS LET BY THE DEPARTMENT OF PUBLIC WORKS OF CANADA, FROM JUNE 30, 1902 TO JUNE 30, 1903.

2ND.—PROPERTY PURCHASED OR SOLD BY THE DEPARTMENT OF PUBLIC WORKS DURING THE FISCAL YEAR ENDED JUNE 30, 1903.

3RD.—PROPERTY LEASED TO AND BY THE DEPARTMENT OF PUBLIC WORKS DURING THE FISCAL YEAR ENDED JUNE 30, 1903.

No. 1.—CONTRACTS let by the Department of Public Works of Canada from the 3 June, 1902, to the 30th June, 1903.

Works.	Names of Contractors.	Date of Contract	Amou
			$
PUBLIC BUILDINGS.			
Nova Scotia.			
Amherst, Post Office building. Supply of coal	Minudie Coal Co'y Ltd.	July 11, 1902	17
Annapolis " "	A. M. King.	" 5, 1902	17
Antigonish " "	Acadia Coal Co'y.	" 26, 1902	6
Arichat " "	James Kenna.	" 11, 1902	24
" Savings Bank "	"	" 11, 1902	
" Customs "	"	" 11, 1902	
" Post Office building. Heating Apparatus	Frank Powers.	Jan'ry 24, 1903	70
" Public building Fittings	Edward Doyle.	March 19, 1903	1,75
Baddeck, Post Office. Supply of coal	The Cape Breton Coal Mining Co. Ltd.	July 26, 1902	12
Dartmouth " "	Int'nial Coal Mining Co	" 12, 1902	
Digby " "	Canada Coal & Ry' Co. Lt	" 18, 1902	21
Guysborough, Public building. Heating apparatus	E. F. Munro	Dec. 23, 1902	1,10
" " Fittings	"	Jan'ry 26, 1903	1,68
Halifax, Dominion Building. Supply of coal	S. Cunard & Co.	July 12, 1902	1,1
" Ass't. Rec. Gen'ls' Office "	"	" 12, 1902	
" Examining Warehouse "	"	" 12, 1902	1
" Immigrant Building "	Inter'nial Coal Mining Co.	" 12, 1902	1
" Ass't. Rec. Gen'ls' Office "	"	" 12, 1902	
Kentville, Post Office "	Acadia Coal Co.	" 26, 1902	1
Liverpool " "	James Kenna.	" 11, 1902	1
Lunenburg " "	James B. Young.	" 11, 1902	2
Middleton, Armoury, Fittings	A. W. Allen & Son.	June 19, 1903	1,4
" Heating system	Crowe Bros	Feb. 24, 1903	1,7
New Glasgow, Post Office. Supply of coal	Int'nial Coal Mining Co.	July 12, 1902	1
North Sydney " "	The Cape Breton Coal Mining Co. Ltd.	" 26, 1902	1
Pictou " "	Chas. W. Ives	" 16, 1902	2
" Custom House "	"	" 16, 1902	
" Custom House & Post Office, Plumbing works &c	The Pictou Foundry & Machine Co.	Aug. 26, 1902	2,1
Springhill, Post Office. Supply of coal	Cumb'land R'y & Coal Co.	July 18, 1902	2
Sydney " "	T. Routledge	" 16, 1902	1
Truro " "	Acadia Coal Co.	" 26, 1902	1
Windsor " "	M. H. Goudge & Son.	" 26, 1902	3
Yarmouth " "	James Kenna	" 11, 1902	
Prince Edward Island.			
Charlottetown, Post Office. Supply of coal	Augustus Down.	" 8, 1902	5
Montague " "	Geo. Whitman	" 8, 1902	
New Brunswick.			
Bathurst, Post Office. Supply of coal	Chas. Powell	Aug. 6, 1902	
" Public Building. Heating & Boiler	R. E. Fitzgerald	" 5, 1902	1,8
Chatham, Post Office. Supply of coal	John Russell & Co.	July 8, 1902	2
Dalhousie " "	Chas. Powell	Aug. 6, 1902	1
Marysville, Public Building. Heating apparatus	C. J. B. Simmons	Jan. 26, 1903	8
" " Inside fittings & concrete floors	"	March 24, 1903	1,3
Moncton, Post Office. Supply of coal	The Strathcona Coal Co.	July 7, 1902	2
Newcastle " "	John Russell & Co.	" 8, 1902	3
Richibucto, construction of a P. office customs &c. building	James Reid	Nov. 25, 1902	9,7
St. John immigrant building. Supply of coal	Vroom & Arnold	Sept. 5, 1902	5
" (North) post office "	R. P. & W. F. Starr	July 7, 1902	
" (West) " "	"	" 7, 1902	1,0
" post office "	"	" 7, 1902	
" Saving bank "	"	" 7, 1902	3
" custom house "	"	" 7, 1902	2,0

No. 1.—Contracts let by the Department of Public Works, &c.—*Continued.*

Works.		Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS—*Continued.*				$ cts.
New Brunswick—Concluded.				
x armoury.	Fittings	H. H. Dryden	Aug 14, 1902	965 00
"	"	S. B. Lordly	March 16, 1902	4,629 00
Quebec.				
er post office.	Supply of coal	Hull Coal Co	July 18, 1902	217 00
cook "	"	B. J. Smith	Nov. 27, 1902	132 08
iam "	"	J. A. Lequin	Aug. 7, 1902	42 00
by public building.—	Heating apparatus	Alex. MacKay & Co	Dec. 16, 1902	1,080 00
"	fittings	Neill & Kent	March 2, 1903	2,650 00
post office.	Supply of coal	Hull Coal Co	July 9, 1902	279 70
ne "	"	Albert F. Dawes	" 21, 1902	96 00
irie "	"	J. B. H. Beauvais	" 9, 1902	129 52
ompton—Construction of post office &c.,				
lding		Edmond Piché	Dec. 1, 1902	10,150 00
real post office—Alterations and additions to				
ings		J. B. Gratton	Nov. 5, 1902	2,245 00
real examining warehouse—Alterations to				
ting apparatus		Pierre Leclerc, fils	Dec. 18, 1902	2,250 00
real examining warehouse fittings		Précourt & Co	Jan. 30, 1903	4,000 00
ec annex to iron foundry, cesspool, &c.		Dussault & Pageau	Oct. 15, 1902	2,071 00
artillery workshop, gallery		Wm. Stuart	" 19, 1902	800 00
post office—Alterations and additions to				
ings		Fred. de Varennes	Nov. 19, 1902	1,950 00
ec iron foundry—Heating apparatus		O. Picard & fils	Dec. 18, 1902	1,190 00
post office building.	Supply of water	Corporation of City of Quebec	" 27, 1902	750 00
custom house	"	"	" 27, 1902	800 00
examining warehouse	"	"	" 27, 1902	450 00
marine building	"	"	" 27, 1902	750 00
artillery workshop—Shafting for trans-				
sion of power		Carrier Lainé & Co	March 7, 1903	1,879 00
ec artillery workshop—Electric light-wiring				
fittings		Slade Electric Co	April 1, 1903	442 00
uski post office.	Supply of coal	H. G. Lepage	July 14, 1902	276 36
yacinthe "	"	C. Rouleau & Fils	" 15, 1902	292 35
hns "	"	Jules Audette	Sept. 2, 1902	
"	"	Adolphe Plante	July 16, 1902	
Rivers, retaining wall		Télesphore Dugré	Nov. 25, 1902	4,999 00
yfield post office.	Supply of coal	Victor Léger	" 11, 1902	42 00
riaville "	"	Ferdinand Beauchesne	July 11, 1902	220 63
Ontario.				
rstburg post office.	Supply of coal	Falls Bros	July 10, 1902	26 65
rior "	"	J. S. Moir	" 16, 1902	
e "	"	Mickle Dyment & Son	" 11, 1902	248 88
ville "	"	C. C. Leavens	" 11, 1902	480 00
n "	"	R. Boehmer & Co	" 11, 1902	260 26
"	alterations and additions	R. Bowman	May 13, 1903	7,316 00
tford "	Supply of coal	Thomas Elliot	July 11, 1902	345 53
tville "	"	Central Canada Coal Co	" 10, 1902	344 00
ga "	"	A. J. Grant	" 21, 1902	89 10
on—Construction of a post office building		S. S. Cooper	" 28, 1902	9,500 00
post office.	Heating apparatus	Martel & Langelier	March 19, 1903	1,150 00
"	Plumbing works	S. S. Cooper	June 22, 1903	700 00
urg "	Supply of coal	Downy Coal Co	July 21, 1902	210 00
onto publics building—	Stone fence, gates, granolithic sidewalks	Richard Sheehy	Sept. 13, 1902	2,000 00
post office.	Supply of coal	The Rathbun Co	July 11, 1902	250 00
public building.	Heating apparatus	Pierre Leclerc, fils	Oct. 17, 1902	1,756 00
"	Fixtures	Robert Sheehy	Feb. 5, 1903	2,800 00
"	Tower clerk	Geo. E. Snider	June 1, 1903	1,325 00

No. 1.—CONTRACTS let by the Department of Public Works, &c.—*Continued.*

Works.		Names of Contractors.	Date of Contract.	Amo
PUBLIC BUILDINGS—*Continued.*				
Ontario—Concluded.				
Dundas post office.	Supply of coal	Thos. Myles & Sons.	July 8, 1902	
" armoury.	Fittings	Jos. Bowman & Co.	Feb. 28, 1903	1,
" drill hall.	Veneering and flooring	"	April 23, 1903	5,
Fort Williams, construction of a public building.		Robert Cameron	July 22, 1902	20,
Galt post office.	Supply of coal	A. J. Colvin	" 11, 1902	
Gananoque post office.	"	C. E. Britton	" 8, 1902	
" custom house.	"	"	" 8, 1902	
Goderich post office.	"	Wm. Lee	" 10, 1902	
" "	Plumbing works	J. H. Worsell	Jan. 15, 1903	
Guelph "	Supply of coal	Kloepfer & Co	July 10, 1902	
" additions and alterations to post office		John Kennedy	March 28, 1903	30,
Hamilton post office.	Supply of coal	Thomas Myles & Sons	July 8, 1902	
Kingston "	"	P. Walsh	" 9, 1902	
" custom house	"	"	" 9, 1902	
" R. M. College.	Wiring	Breck & Halliday	" 14, 1902	
" R.M.C. Gymnasium.	Heating apparatus	McKelvey & Birch	Sept. 19, 1902	
" Gymnasium.	"	"	March 19, 1903	1,
" "	Wiring and fixtures.	Breck & Halliday	" 15, 1903	
Lindsay post office.	Supply of coal	The Rathbun Co	July 11, 1902	
London "	"	Bowman & Co	" 7, 1902	
" custom house	"	"	" 7, 1902	
" construction of a drill hall		Sullivan & Langdon	Dec. 6, 1902	133,
Napanee post office.	Supply of coal	F. E. Van Luven	July 21, 1902	
Niagara "	"	John E. Hutchings	" 11, 1902	
Orangeville post office.	"	J. R. Lathwell	" 17, 1902	
Orillia "	"	Andrew Tait	" 14, 1902	
Ottawa public buildings.	"	John Heney & Son	May 13, 1902	41,
" experimental farm.	"	McCullough & Co	July 11, 1902	1,
" public building.	Supply of millwood	W. C. Edwards & Co. Ltd	" 14, 1902	(p.cor
" construction of astronomical observatory exp. farm		Théophile Viau	Aug. 28, 1902	74,
" post office building—Elec. passeng. elevator		The Turnbull Elev. Mf. Co	Feb. 3, 1903	5,
" " Current for operat. of elevator.		The Ottawa Elec. Co	March 24, 1903	(p.an
" public bldgs. and offices.	Supply of ice.	J. O. Charlebois & Co	June 24, 1903	(p. 100
Pembroke post office.	Supply of coal	Dunlop & Co	July 18, 1902	
Peterborough "	"	The McClennan Co	" 11, 1902	
Picton "	"	The Rathbun Co	" 11, 1902	
Port Arthur "	"	Louis Walsh Coal Co	" 22, 1902	
Port Colbourne public building.	Heating appartus	Keith&FitzimmonsCoL'd	Nov. 5, 1902	
Port Hope post office.	Supply of coal	Wright & Rosevear	July 5, 1902	
Prescott "	"	James Buckly	" 16, 1902	
" custom house.	"	"	" 16, 1902	
St. Thomas post office	"	Ellison & Lewis	" 16, 1902	
Sarnia public building.	Heating apparatus.	Alex. Mackay & Co	April 6, 1903	1,
" "	Improvements	Geo. A. Proctor	" 4, 1903	4,
Smith's Falls post office.	Supply of coal	A. Foster	July 16, 1902	
Stratford "	"	John E. Hutchings	" 11, 1902	
Strathroy "	"	Alex. Reed	" 16, 1902	
Toronto "	"	The Elias Rogers Co	" 16, 1902	1,
" Custom House	"	"	" 16, 1902	
" Ex'g Warehouse	"	"	" 16, 1902	1,
" Revenue Office	"	"	" 16, 1902	
" Post Office. Additions & alterations to.		David Carlyle	Nov. 26, 1902	21,
" Postal Station "C"	Heating Apparatus	Harrison & Robertson	Jan. 13, 1903	
" " "	Wiring and Fixtures	The Keith & Fitzsimmons Co. Ltd	March 10, 1903	
Toronto Junction. Construc. of a Post Office Bldg.		Joy & Needham	May 29, 1903	23,
Trenton Post Office.	Supply of coal	J. Funnel	July 16, 1902	
Windsor "	"	F. X. Scully	" 19, 1902	
" "	Tile floor in lobby	Euc. Jacques	Dec. 24, 1902	
Woodstock "	Supply of coal	Frank Frank	July 19, 1902	

No. 1—CONTRACTS let by the Department of Public Works &c.—*Continued.*

Works.		Names of Contractors.	Date of Contract.	Amount.
				$ cts.
PUBLIC BUILDINGS—*Concluded.*				
Manitoba.				
ndon Post Office.	Supply of coal	Robert Purdon	July 14, 1902	681 90
" Expl. Farm.	"	"	" 14, 1902	192 61
tage la Prairie, Public Building	"	G. B. Housser & Co	" 15, 1902	744 81
nnipeg, Imm. office and shed	"	Windatt & Co	" 29, 1902	420 00
" Indian Office & Crown T. Office	"	Taylor & Sons	" 29, 1902	380 80
" Custom Office	"	Harstone Bros	" 29, 1902	702 88
" Post Office	"	"	Aug. 5, 1902	1,994 82
" Ex'g. Warehouse	"	D. E. Adams	" 5, 1902	378 32
North West Territories.				
nduff, Court House.	Heating Apparatus	T. & R. Cotter	Jan. 30, 1903	1,078 00
" "	Fittings	T. M. Harrington & Co	April 16, 1903	269 00
nonton, Construction of a jail		Chas. May	June 25, 1903	50,150 00
" Dominion Land.	Supply of coal	Milner & Blatchford	Aug. 20, 1902	180 00
ian Head, Experimental Farm	"	Geo. Thompson	Sept. 22, 1902	
cleod, Court House	"	Geo. Skelding	July 15, 1902	56 96
" Custom House	"	"	" 15, 1902	119 94
" Construction of a Court House		Patrick Navin	Oct. 8, 1902	13,973 60
s- Jaw, Court House.	Heating Apparatus.	Cotter Bros	Nov. 8, 1902	525 00
" "	Supply of Coal	R. Beard	July 21, 1902	132 00
ina, "	"	Rembler Paul	" 14, 1902	531 25
" Dominion Land	"	"	" 14, 1902	476 25
" Post Office	"	"	" 14, 1902	256 25
seley, Court House	"	Magee & Thompson	Aug. 20, 1902	219 17
kton, Construction of Court House		Thomas Fulton	Oct. 4, 1902	8,760 00
" Immigrant Building.	Supply of coal	Wm. Simpson	Sept. 12, 1902	136 86
British Columbia.				
nloops, Drill Shed.	Heating apparatus	Jas. M. Benzie	Jan. 19, 1903	365 00
lo, "	Installation of lights	Kootenay Elec. Co. Ltd.	Sept. 22, 1902	170 90
"	Additional works	D. J. McLachlan	Aug. 2, 1902	590 00
"	Fittings & Furniture.	Kennedy & Burden	June 12, 1903	525 00
son, Public Building.	Heating Apparatus.	R. Jas. Nott	Dec. 8, 1902	1,875 00
" Drill Shed.	do	Frank E. Hebden	Jan. 15, 1903	215 00
" Post Office &c. Building.	Fittings	T. Viau & Chs. Lemoine.	" 29, 1903	4,400 00
sland, Post Office &c. Building	Fittings	T. Viau & Chs, Lemoine.	Jan. 29, 1903	4,950 00
liams, Head Quar. Station, Engine Dynamo, c. for lighting		Ahearn & Soper Ltd.	Aug. 15, 1903	11,313 00
HARBOURS AND RIVERS.				
Nova Scotia				
cousse, construction of wharf and warehouse.		Wm. J. Landry	Mar., 28, 1903	4,388 00
m Head, "	breakwater	W. Suttis & A. Fleming.	Nov. 13, 1902	4,865 00
t Lawrence "	pile wharf	J. J. Lyons & J. White	June, 2, 1903	14,895 00
en Cove "	breakwater	Hugh McDonald	Feb. 4, 1903	6,475 00
ring Cove "	public brakewater	D. W. B. Reid & L. Archibald	" 16, 1904	11,475 00
ry's River "	brakewater	D. W. B. Reid & L. Archibald	Sept. 22, 1902	15,840 00
t Hawkesbury, reconstruction and extension Long wharf		S. O'Donohue & Girroir.	" 11, 1902	9,450 00
dy Cove, construction of public breakwater.		Hayden & Oliver	Feb. 12, 1903	13,000 00
th Bay—Ingonish, construction of public wharf		Hugh McDonald	" 28, 1903	2,485 00
erton, construction of public breakwater		Hayden & Oliver	" 12, 1903	17,000 00
shabuck Centre, construction of wharf and road		Hugh Mcdonald	Apl. 6, 1903	5,860 00

No. 1—CONTRACTS let by the Department of Public Works, &c.—*Continued.*

Works.	Names of Contractors.	Date of Contract	Amo
HARBOURS AND RIVERS.—*Concluded.*			
Prince Edward Island.			
Cove Head, construction of shear dam	Alex. & W. Compton	March. 12, 1903	6,
St. Peters, construction of new block at breakwater	Robert N. Cox	Sept. 26, 1902	2,
New Brunswick.			
Hopewell Cape, construction of approach and roadway to pier	Downey & Lynds	Feb. 9, 1903	
Oromocto, construction of wharf	Gel. A. Appleby	Jan. 22, 1903	6,
Upper Salmon river, extension of breakwater	A. E. Smye, & M. Alcorn	Aug. 6, 1902	4,
Quebec.			
Cross Point, construction of a wharf	Lachance & Co	March. 20, 1903	9,
Levis Graving Dock, supply of water	C. F. Langlois	July, 27, 1902	p. year
Pointe a Paquin, River St. Maurice, supply of timber for jam piers	O. Desaulniers	March, 6, 1903	5,
Pointe St. Pierre—Gaspé, construction of breakwater	J Heney & H. Smith	Sept. 4, 1902	22.
Portage du Fort, masonry and roadway appr. of the bridge	Thos. Moran	June, 22, 1903	10,
Quebec, improvements in harbour	Dussault & Lemieux	May, 8, 1903	198,
Richmond, Riv. St. François, construction of 4 ice piers	Wm. Ross	Dec. 27, 1902	11,
Rivière au Renard, additional length to wharf	J. J. Lyons & J. White	June, 2, 1903	41,
St. François, Isld. of Orleans, isolated Block	The W. J. Poupore Co. ltd	Feb. 7, 1903	11,
St. Irénée, addition to wharf	Nap. Trudel	Jan. 24, 1903	10,
Ontario.			
Blind River, construction of pile wharf	Robert Grant	Feb. 11, 1903	9,
Burk's Falls, " wharf	David Conroy	Jan. 2, 1903	5,
Collingwood Harbour, deepening	C. S. Boone	Aug. 29, 1902	35,
Huntsville, construction of pile wharf	Geo. Hutcheson	" 22, 1902	2,
" additional work to pile wharf	"	Feb. 17, 1903	
Orillia, construction of wharf	Green & MacKinnon	Jan. 12, 1903	8,
Owen Sound Harbour, dredging	A. F. Bowman	Sept. 5, 1902	24,
Point Pelee Island, extension to wharf	A. M. McCormick & Son	Dec. 15, 1902	3,
Port Arthur dredging	C. S. Boone	March 5, 1903	(p.hr.)
Sturgeon Falls—Construction of wharf	Robert Grant	Jan. 23, 1903	2,
VESSELS, DREDGES AND PLANT.			
Construction of a locomotive boiler for dredge 'Queen'	Powers & Co	Aug. 23, 1903	1,
" buckets for dredge 'St. Lawrence.'	The Pictou Foundry & Machine Co	Feb. 3, 1903	1,
" a marine return tubular boiler for tug 'Delisle'	Powers & Co	" 16, 1903	2,
" a marine return tubular boiler for tug 'Ottawa.'	"	May 4, 1903	1,
" air pump and condenser for dredge 'Progress,'	Wheeler Condenser and Engineering Co	" 1, 1903	1,
" air pump and condenser for tug 'Monitor.'	J. & R. Weir	" 1, 1903	1,
" bow and stern cable winches for dredge 'J. Israel Tarte.'	The Polson Iron Works	" 12, 1903	5,
Electrical plant for swinging the govt. bridge—Burlington channel	McLachlan Joy Electric Co	" 18, 1903	2,

No. 1.—CONTRACTS let by the Department of Public Works, &c.—*Continued.*

Works.	Names of Contractors.	Date of Contract.	Amount.
			$ cts.
TELEGRAPHS.			
bou to Port Hawkesbury, N.S...Construction f a telegraph line	Ronald McInnes	Aug. 27, 1902	p.mile 40 00
-Mile House to Quesnelle *via* Horsefly, B.C.—onstruction of a telegraph line	James B. Shields	" 30, 1902	" 69 00
Peters to Port Hawkesbury, N.S.—Construction of a telegraph line	Murdoch Cameron	Sept. 6, 1902	" 50 00
" Main-à-Dieu, &c., &c., N.S.—Construction of a telegraph line	Ahearn & Soper Ltd	Oct. 3, 1902	13,625 00
gdelen Islands to Anticosti & Bryon Islands 16 knots deep sea gutta percha cable	Henley's Telegraph Wks Co. of London, England	Dec. 16, 1902	60,436 00
gdelen Islands to Anticosti & Bryon Islands knot of special armoured cable	Henley's Telegraph Wks Co. of London, England	" 16, 1902	1,200 00

J. A. CHASSÉ,
Law Clerh.

PARTMENT OF PUBLIC WORKS,
OTTAWA, December 5, 1903.

No. 2.—STATEMENT of properties purchased or sold by the Department of Public Works during the Fiscal Year ended June 30, 1903.

Date of Conveyance.	Vendors.	Purchasers.	Description of Property.	For what purpose.	Area.	Price.
1902						$ cts.
July 25....	The SouthShoreR.R.C.	His Majesty	Land and wharf part of lot No. 1, Sorel, P. Q.....	For wharf	400 x 2,063 ft.....	1,000 00
Aug. 8....	His Majesty	Arc. McPhee	Land and premises lot No. 38, 3rd concession Township of Lochiel, Alexandria, Ont.....	Private enterprise....	100 acres.....	2,800 00
" 11....	A. M. Nanton & J. H. Manson	His Majesty	Lots No. 9 to 29, Block 18, Red Deer, N.W.T.....	Site for court house..	.....	830 00
Sept. 2....	Nellie Fisher Eddy....	"	Land at Blind River, Algoma, Ont.....	Appr. to wharf.....	1/3 of an acre.....	350 00
" 4....	Donald Kempt & Uxor	"	Strip of land between public road and shore of Great Bras d'Or—Kempt Head, N.S	"	18,800 sqr. ft.....	50 00
" 10...	Maganetawan River Ry Co. & Maganetawan Tanning & Electric Co.	"	Part lot No. 10, subdivision of lot No. 4, 9th concession, Township of Armour, Burk's Falls, Ont.....	"	1/100 of an acre..	1 00
Apr. 19....	H. Knight Bros. Co...	"	Part of lot No. 4, 9th Concession, Armour Township, Burk's Falls, Ont.....	Appr. to wharf..	3/100 of an acre....	1 00
June 30...	The Muskoka & Georgian Navigation Co. Ltd.....	"	Part of lot No. 4, 9th Concession, Armour Township, Burk's Falls, Ont.....	"	14/100 af an acre....	1 00
Sept. 15....	John E. Stocker . .	"	Land—Oromocto, N. B	For wharf.....	1/100 acre.....	250 00
" 20....	J. T. Ross & al.. .	"	Part of lot No. 23, N. side of Main St., Hamilton, Ont...	Gov. purposes.....	12½ perches.....	9,000 00
Oct. 1....	North American Bent Chair Co...	"	Land part of lot 12, Owen Sound, Ont	Harbour improvements	3/35 acre	400 00
" 23....	Eliza Torrey.....	"	Land at Guysboro' N.S	Site for pub. bldg.....	15,537 ft.	800 00
Nov. 18....	Jas. Dempsey & ux....	"	Land at Herring Cove, N.S.....	Site for wharf.....	1,200 sqr. ft.....	1 00
" 20....	J. Arsenau & al.	"	Land at Ruisseau LeBlanc, P.Q	Road to wharf.....	5,000 ft.....	2 00
Dec. 6....	The Hudson Bay Co..	"	Lots 11, 12, 13, 14—Block 3, Winnipeg, Man	For pub.bldg.....	.....	3,000 00
" 18 ..	Ph. Morrison & uxor..	"	Land between pub. road and shore of Great Bras d'Or channel—Boularderie Isld., N.S.....	Appr. to wharf.....	18,800 sqr. ft.....	50 00
1903						
Jan. 7....	S. S. Scott & W. G. Robertson.....	"	Sale of SS. *Tyrian*.....	Gov. purposes.....	.....	20,000 00
" 20...	Robert Johnston... .	"	Lots Nos. 78 and 100 Valleyfield, P.Q..	Site for pub. bldg.....	.....	10,000 00
" 27....	A. Faulkner & ux.....	"	Parcel of land—Faulkner's Creek, N.S	For wharf	1/6 of an acre.....	60 00
" 29....	Neil P. McLean & ux..	"	Parcel of land--Washabuck Centre, N.S.....	"	9,550 sqr. ft.....	1 00
Feb. 3....	Fabrique St. Mathias, Q	"	Lot No. 57, St. Mathias, P.Q.....	"	5,200 sqr. ft.....	Donation entre vifs.
" 23....	J. F. Guité.	"	Lots Nos. 47 and 48; 1st Range, Maria Township, P.Q..	"	26,500 sqr. ft.. . .	1 00
" 23....	R. Arseneau & al.....	"	Land, 1st Range, Township of Hamilton, Ruisseau			

Date of Conveyance.	Vendors.	Purchasers.	Description of Property.	For what purpose.	Area.	Price.
1903						$ cts.
Mar. 19...	F. Landry & al.....	His Majesty	Land at D'Escousse, N.S.	For wharf	15,840 sqr. ft	200 00
" 19....	Thos. D. Morrison & al	"	" "	"	15,023 sqr. ft.....	100 00
" 21....	J. & R. Weir..... ...	"	Sale of steel tug *Monitor*.....	Gov. purposes... ...	.....	12,500 00
" 30....	Sam. Clarke & ux.....	"	Town lots 7 & 15, block "C" Cobourg, Ont.....	For armoury.....	16,936 sqr. ft..	4,000 00
" 31 ...	John Hodgson & uxor.	"	Land at Drum Head, N.S.....	Appr. to wharf.....	8,200 superficial ft ..	25 00
Apr. 2 ...	Govt. of Nova Scotia..	Federal Gov.	Water lot at l'Ardoise, N.S	For wharf..... ...	.....	Transfer
" 11....	Wm. Brown..... .	His Majesty	Part of lot No. 37, Pointe Fortune, P.Q.....	"	18,039 ft.....	1,000 00
" 24 ...	C. A. Gillis & al	"	Land at West Bay "The Points" N.S.....	"	32,185 sqr. ft.....	15 00
" 29 ...	John McMillan & ux..	"	Land & land covered with water, Isaac's Harbour, N.S .	"	$\frac{1}{10}$ of an acre.....	400 00
May 1...	Catherine Garvin.....	"	Lots 279, 280, 289—Kingston, Ont	For Field Battery. ...	.....	5,000 00
" 5....	Corporat'n of Barrie, O.	"	Land & premises, foot of Bayfield St., Barrie, Ont. ...	Public bldg..... ...	$\frac{60}{100}$ acre.....	1 00
" 19....	M. Delaney.	"	Sale of tug *C. S. Parnell*.....	Gov. purposes.....	....	1,800 00
" 19...	B. F. Kenney & ux....	"	Land and land covered with water, Indian Brook, N.S...	"	....	150 00
" 19....	Municipality of Percé, P.Q.....	"	Parts of lots 452, 455 & 457, Percé, P.Q.....	For wharf..... ..	....	Free Grant
June 5....	D. E. Larose & al.....	"	Sale of lot No. 314, Thetford Mines, P.Q	Public bldg.	5,000 ft.	1,800 00
" 20....	Corporat'n of Bowmanville, Ont.....	"	Southerly 100 ft. of lot 39, Block "M" Bowmanville, Ont	"	6,600 ft..	5,000 00

No. 3.—STATEMENT of properties leased to and by the Department of Public Works during the Fiscal Year ended June 30, 1903.

Date	Lessors.	Lessees.	Property Leased.	For what purpose.	Duration of Lease.	Annual Rental.
1902.						
July 1	His Majesty	A. J. Green	Building—Ouellette and Chatham streets, Windsor, Ont.	Private enterprise	1 year	$100 00 per annum
Sept. 20	"	Gowrie & Block House Collieries, Ltd.	Water lot, westward of Gov. pier, Port Morien, N.S.	"	65 "	1 00 " "
1903.						
March 7	C. Hiebert	His Majesty	Building at Didsbury, N.W.T.	Immg. purposes	6 months	13 33⅓ p. month
" 9	Thistle Estate	"	Rooms in 'Thistle Bldg.' Ottawa.	Chf. Astronomer	1 year	800 00 per annum
" 22	L. B. Matusch	"	Building at Ponoka, N.W.T.	Immg. purposes	1 year	100 00 " "
" 28	Wm. Bristow	"	Port'n of Bldg at Grenfell. N.W.T	"	6 months	8 00 per month
April 15	N. A. Rogstad	"	House at Metaskiwin, N.W.T.	"	1 year	100 00 per annum
" 27	A. H. Woodman	"	Building at Prince Albert, N.W.T.	"	4 months	10 00 per month
May 1	James Walker	"	Ground floor 'Walker Bldg.' St. John, N.B.	For Militia	1 year	300 00 per annum
" 1	Martha Horton	"	Premises No. 55, Metcalfe street, Montreal, P.Q.	Post Office Dept	1 year	300 00 " "
" 3	His Majesty	H. A. Gray	Land & prem.—Toronto Harb. Ont		5 years	1 00 " "
June 4	"	Parks Committee of Kingston	Land between P. O. & Cust. H. Kingston, Ont.		During pleasure	1 00 " "

DEPARTMENT OF PUBLIC WORKS,
December 5, 1903.

J. A. CHASSÉ
Law Clerk.

LIST

OF SOME OF THE

ACTS OF PARLIAMENT

PASSED AT THE SESSION OF 1903

HAVING REFERENCE TO THE

DEPARTMENT OF PUBLIC WORKS OR WORKS UNDER ITS CHARGE

LIST of some of the Public Acts of the Parliament of Canada, passed at the Third Session of the Ninth Parliament, closed by Prorogation on October 24, 1903, and having reference to the Public Works Department or works under its charge (3 Edward VII).

Subject.	Full Title of the Statute.	Chapter.	Page in Statute Book.
Sums granted to His Majesty for the financial years ending June 30, 1903, and June 30, 1904, and the purposes for which they are granted.	An Act for granting to His Majesty certain sums of money for the public service of the financial years ending respectively the 30th June, 1903, and the 30th June, 1904.....	2	11
Respecting the Civil Service.	An Act to amend the Civil Service Act..	9	113
Respecting Civil Service Superannuation Act.	An Act to amend the Civil Service Superannuation Act.....	10	121
Respecting Subsidy for construction of Dry Docks.	An Act respecting the encouragement of the construction of Dry Docks.....	17	149
Respecting Expropriation Act.	An Act to amend The Expropriation Act.....	22	161
Respecting advances to Harbour Commissioners of Montreal.	An Act to provide for further advances to the Harbour Commissioners of Montreal.....	36	197
Respecting Public Works Act.	An Act to amend the Public Works Act.....	52	249

N.B.—Upper Ottawa Improvement Company, Limited.—A schedule of tolls to be charged by said company in connection with the improvements of their works for the season of 1903, was approved by an Order in Council passed on the 25th of February, 1903.

Rouge Boom Company of Calumet, Limited.—A schedule of tolls to be charged by said company in connection with the improvements of their works for season 1903, was approved by an Order in Council passed on the 17th of March, 1903.

French River Boom Company, Limited, of Toronto, Ontario.—A schedule of tolls to be charged by said company for the use of their works during the season of 1903, was approved by an Order in Council passed on the 14th of April, 1903.

J. A. CHASSÉ,
Law Clerk.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, December 5, 1903.

NATIONAL ART GALLERY

CURATOR'S REPORT

FOR THE FISCAL YEAR ENDED JUNE 30, 1903.

NATIONAL ART GALLERY.

OTTAWA, January 14, 1904.

FRED GELINAS, Esq.,
Secretary,

SIR,—I have the honour to report that the following additions have been made to the National Art Gallery of Canada during the fiscal year ending June 1903.

Oil paintings :—

"The Mendicant" by E. Dyonnet, Esq., R.C.A.

"St. Andrews, N. B." by William Hope, Esq., R. C. A., presented by the Royal Canadian Academy. "Under the Willows" by G. Horn Russell, presented by Miss Caroline Hile of Ottawa.

The following pictures were purchased by the Government :—"The Peddler" by H. Tenkate for the sum of twelve hundred and fifty dollars ($1,250.00).

"Vintage in Champagne" by Emile Baron.

"Watering Horses" by G. Calves.

"The Cavalry Charge" by H. Chartier.

"C'est toujours la même Chanson" by Paul Guillot.

"The Abandoned Corner" by Hermann.

"Le Gynécée" by G. Rochegrosse.

"The Ambuscade" by H. C. Roy.

The cost of these seven pictures was five thousand two hundred and fifty dollars ($5,250.00).

Ten thousand four hundred and fifty-one (10,451) visitors registered during the year.

The Gallery was closed to the public during the month of July on account of repairs and again from April 1 to May 15, during the Exhibition of the Royal Canadian Academy.

I have the honour to be, sir,

Your obedient servant,

L. FENNINGS TAYLOR,
Curator National Art Gallery.

NAMES OF THE CHIEF OFFICERS

OF THE

DEPARTMENT OF PUBLIC WORKS

WITH

DATES OF APPOINTMENT, ETC., FROM 1841 TO 1903

NAMES OF THE CHIEF OFFICERS.

The names with the dates of the appointment, &c., of the principal Officials of the Department of Public Works, from 1841 to 1903.

Names.	Capacity or Office.	Date of Appointment. Served From	To
Under Statute 4-5 Vic., Cap. 38.			
CORPORATION BOARD OF WORKS.			
Killaly, Hon. H. H	Chairman		
Daly, Hon. D	Members	Dec. 29, 1841	Oct. 3, 1844
Harrison, S. B			
Sullivan, R. B			
Davidson, J., Esq			
Begly, Thomas A	Secretary	Aug. 17, 1841	
Keefer, Samuel	Chief Engineer	" 17, 1841	
Rubidge, F. B	Architect and Assistant Chief Engineer	Dec. 15, 1841	
NEW BOARD OF WORKS.			
Killaly, Hon. H. H	Chairman		
Daly, Hon. D	Members	Oct. 4, 1844	June 8, 1846
Draper, Hon. W. H			
Morris, Hon. W			
Papineau, Hon. D. B			
Under Statute 9th Vic., Cap. 37, &c.			
Robinson, Hon. W. B	Chief Commissioner	June 22, 1846	March 10, 1848
Taché, Hon. E. P	"	March 11, 1848	Nov. 26, 1849
Chabot, Hon. J	"	Dec. 13, 1849	March 31, 1850
Merritt, Hon. W. H	"	April 8, 1850	Feb. 11, 1851
Bourret, Hon. J	"	Feb. 12, 1851	Oct. 27, 1851
Young, Hon. John	"	Oct. 28, 1851	Sept. 22, 1852
Chabot, Hon. J	"	Sept. 23, 1852	Jan. 26, 1855
Lemieux, Hon. F	"	Jan. 27, 1855	Nov. 25, 1857
Alleyn, Hon. C	"	Nov. 26, 1857	Aug. 1, 1858
Holton, Hon. L. H	"	Aug. 2, 1858	" 6, 1858
Sicotte, Hon. L. V	"	" 7, 1858	Jan. 10, 1859
Rose, Hon. John	"	Jan. 11, 1859	June 12, 1861
Cauchon, Hon. Jos	Commissioner	June 13, 1861	May 23, 1862
Tessier, Hon. U. J	"	May 24, 1862	" 27, 1863
Drummond, Hon. L. T	"	" 28, 1863	July 23, 1863
Laframboise, Hon. M	"	July 24, 1863	March 29, 1864
Chapais, J. C	"	March 30, 1864	June 30, 1867
Casgrain, Hon. Chas. Eus	Second Commissioner	July 9, 1846	Feb. 29, 1848
Cameron, Hon. M	Assistant Commissioner	March 11, 1848	" 1, 1850
Wettenhall, James, Esq	"	Feb. 2, 1850	April 16, 1850
Bourret, Hon. Jos	"	April 17, 1850	Feb. 11, 1851
Killaly, Hon. H. H	"	Feb. 12, 1851	May 6, 1859
Keefer, Samuel	Deputy Commissioner	May 6, 1859	March 7, 1864
Trudeau, Toussaint	"	March 8, 1864	May 29, 1868
Begley, Thos. A	Secretary	Feb. 10, 1841	Oct. 31, 1858
Trudeau, Toussaint	"	Dec. 13, 1859	March 7, 1864
Braun, Frederick	"	March 8, 1864	July 1, 1867
Page, John	Chief Engineer	Oct. 31, 1873	Oct. 1, 1879

The names with the dates of the appointment, &c., of the principal Officials of the Department of Public Works, from 1841 to 1903—*Concluded.*

Names.	Capacity or Office.	Date of Appointment. Served From		To	
Under Statute 31 Vic., Chap. 12.					
McDougall, Hon. Wm	Minister	July	1, 1867	Dec.	7, 1869
Langevin, C.B., Hon. Hector L.	"	Dec.	8, 1869	Nov.	6, 1873
Mackenzie, Hon. Alexander	"	Nov.	7, 1873	Oct.	16, 1878
Tupper, C.B., K.C.M.G., Sir Charles	"	Oct.	17, 1878	May	19, 1879
Langevin, C.B., K.C.M.G., Sir Hector L.	"	May	20, 1879	Aug.	11, 1891
Smith, Hon. Frank	Acting Minister	Aug.	14, 1891	Jan.	10, 1892
Ouimet, Hon. Joseph Aldric	Minister	Jan.	11, 1892	April	30, 1896
Desjardins, Hon. Alphonse	"	May	1, 1896	July	12, 1896
Tarte, Hon. J. Israël	"	July	13, 1896	Oct.	21, 1902
Sutherland, Hon. James	"	Nov.	11, 1902		
Trudeau, Toussaint	Deputy Minister	May	29, 1868	Oct.	1, 1879
Baillairgé, G. F	"	Oct.	4, 1879	Dec.	31, 1890
Gobeil, A	"	Jan.	1, 1891		
Braun, Frederick	Secretary	July	1, 1867	Sept.	30, 1879
Chapleau, S	"	Oct.	1, 1879	Nov.	4, 1880
Ennis, F. H	"	Nov.	5, 1880	Jan.	13, 1885
Gobeil, A	"	Jan.	23, 1885	Dec.	31, 1890
Roy, E. F. E	"	"	1, 1891	"	31, 1900
Gelinas, Fred	"	June	8, 1901		
McPherson, D. A	Assistant Secretary	Jan.	18, 1891	April	11, 1893
Desrochers, Rodolphe Charles	"	"	8, 1896		
Page, John	Chief Engineer	July	1, 1868	Oct.	1, 1879
Perley, H. F.	"	Nov.	25, 1880	July	10, 1891
Coste, Louis	"	July	26, 1892	March	18, 1899
Lafleur, E. D	Acting Chief Engineer	March	18, 1899		
Scott, Thos. S	Chief Architect	May	26, 1871	Oct.	30, 1881
Fuller, Thomas	"	Oct.	31, 1881	June	30, 1897
Ewart, David, I.S.O.	"	Nov.	2, 1897		

NAMES

OF THE

OFFICIALS EMPLOYED ON THE SLIDES AND BOOMS OF CANADA

ON JUNE 30, 1903

WITH

DATES OF APPOINTMENT, SALARIES, ETC.

OFFICIALS EMPLOYED ON THE SLIDES AND BOOMS.

STATEMENT showing the Names, Dates of Appointement, Salaries, &c., of persons employed on the various Slides and Booms, on June 30, 1903.

Name.	Date of Birth.	Position.	Where employed.	Date of Appointment.	Salary.	Remarks.
Collector af Slide and Boom Dues.					$ cts.	
E. T. Smith	Nov. 26, 1846	Collector	Ottawa	July 1, 1889	1,800 00 a year	Date of first appointment to Crown timber office, Ottawa, June 23, 1864. Clerk in Dept. of Inland Rev., July 1, 1873, to June 30, 1889. Transferred to civil list with rank of first class clerk, January 5, 1892.
F. X. Gagné	Sept. 23, 1859	Clerk	"	Dec. 16, 1897	1,003 75 "	Entered the service Aug. 13, 1889.
James Steen	June 17, 1830	Boatman	"	July 12, 1889	60 00 a month	Employed during the season of navigation, for 8 months each year. Date of first appointment, May 26, 1861. Timber counter, Ottawa, for Dept. of Inland Revenue, Jan. 7, 1834, to June 30, 1889
J. Brassard		"	"	March 1, 1901	60 00 "	Employed during the season of navigation, for 8 months each year.
Saguenay District.						Saguenay district slides abandoned by authority of O.C., dated Feb. 5, 1896 (No. 168,740).
St. Maurice District						
L. P. Dallaire		Paymaster	Three Rivers	May 1, 1898	66 66 a month	
P. Juneau		Boom master	Grand'Mère	May 1, 1902	45 00 "	
Jos. Pagé	July 7, 1845	"	M'th of St. Maurice	Dec. 10, 1879	75 00 "	
Jos. Dick		Asst. boom master	Three Rivers	May 19, 1898	75 00 "	
Gédéon Rousseau		Boom master	Shawenigan Falls	April 7, 1896	75 00 "	
Moïse Masson		"	Grandes Piles	May 19, 1898	75 00 "	
N. Lymburner	July 22, 1855	"	Shawenigan Falls	July 1, 1895	75 00 "	
A. Paquin		"	Ste. Flore	Dec. 1, 1901	75 00 "	
Ottawa District.						
G. P. Brophy	Feb. 24, 1846	Superintendent	Ottawa	July 6, 1873	2,500 00 a year	*Ottawa River Works*—In addition to the
D. Scott	" 15, 1830	Accountant	"	Oct. 1, 1854	1,500 00 "	above officers, &c., there are employed

J. C. Scott	June 27, 1865	Measurer	Ottawa	April 1, 1889	3 50 a day	during the running season, one foreman on slide at $1.50 and one assistant foreman at $1.25 a day ; also 25 to 30 labourers at $1 to $1.40 a working day.
J. Kent	Jan. 28, 1864	Clerk	"	Aug. 1, 1886	3 25 "	
Wm. Cain	April 22, 1860	Messenger	"	Jan. 1, 1892	1 35 "	
Pierre St. Pierre		Deputy slide master.	Carillon	June 1, 1897	1 40 "	Actively employed about 7 months. Oversees repairs in winter.
D. Noonan	June 17, 1840	Boom master	Gatineau	Mar. 21, 1878	500 00 a year	" "
J. Soulière	Nov. 8, 1829	Deputy slide master	Chaudière	1878	2 50 a day	" "
P. D. Chéné		"	Hull	June 14, 1899	1 50 "	Employed about 6 months.
W. A. Shireff		"	Chats	April 26, 1898	1 50 "	Oversees repairs in winter.
John Harvey	May 22, 1831	Slide master	Arnprior	July 12, 1882	2 50 "	Actively employed about 7 months.
Joseph McCrea	Mar. 26, 1869	Boom master	Springtown	May 15, 1880	300 00 a year	Employed about 3 months during season of navigation.
Patrick Barry	" 27, 1858	Slide master	High Falls	Mar. 10, 1888	1 50 a day	Employed 5 months during season of navigation. Oversees repairs in winter.
Duncan McLaren	Jan. 7, 1860	Deputy slide master.	Portage du Fort	Sept. 7, 1881	456 25 a year	" " "
D. Rochon		"	Black River		480 00 "	" " "
Wm Selkirk		"	Lower Petewawa		2 00 a day	" " "
P. O'Connor		"	Upper Petewawa	Mar. 18, 1898	2 00 "	
Wm. Thompson	May 3, 1843	"	Mountain	Oct. 10, 1879	1 25 "	" 6 mos, " "
S. Moorhead		"	Calumet	Mar. 1, 1901	1 25 "	" 6 to 7 mos. " "
John Mullin		"	Coulonge	April 10, 1890	360 00 a year	" 4 mos. " "
H. R. Downey	May 16, 1846	"	Des Joachims	July 1, 1889	360 00 "	" " " "
J. F. McGuire		"	Dumoine	May 1, 1897	2 00 a day	Employed 3 months during season of navigation. Will inspect works when required.
J. J. French		"	Crooked Chute		2 00 "	" " "
A. H. Johnson	Nov. 28, 1839	"	Chenaux	1865	2 50 "	Paid during season of navigation, 7 mos.
Newcastle District.						
S. Clegg		Superintendent	Peterborough	Mar. 1, 1901	1,600 00 a year	
G. H. Giroux		Clerk, Supt's office	"	" 1, 1880	400 00 "	Receives $500 a year from Department of Railways and Canals.
W. T. Junkin		Slide master	Fenelon Fall	Nov. 15, 1896	100 00 "	$250 a year as lock master, Dept. R. & C.
R. T. Hill		"	Buckhorn	July 1, 1891	100 00 "	Receives $150 a year from Department of Railways and Canals.
Hamilton Johnston		"	Heeley's Falls	" 15, 1892	200 00 "	
John Dinwoodie		"	Lakefield	June 20, 1893	150 00 "	Receives $240 a year from Department of Railways and Canals.
Richelieu District.						
C. Choquette		Boom master	Belœil Station	July 26, 1897	100 00 "	

STATEMENT showing Names, &c., of persons employed on various works—*Concluded.*

Name.	Date of Birth.	Position.	Where employed.	Date of Appointment.	Salary.	Remarks.
					$ cts.	
Burlington Channel Swing Bridge.						
Wm. Omand		Bridge attendant	Burlington	Sept. 19, 1896	600 00 a year	
W. Hopkins		" assistant	"	July 1, 1902	1 25 a day	Employed 9 months.
H. Lampman		" "	"	Sept. 8, 1902	1 25 "	"
Jas Eustice		" "	"	" 19, 1896	1 25 "	"
Yamaska Lock.						
O. Mineau		Lock keeper	Yamaska	Sept. 1, 1885	75 00 a month	
H. Lambert		"	"	July 1, 1897	40 00 "	
Rivière du Lièvre Lock.						
Hugh R. Gorman		Lock master	Rivière du Lièvre	April 15, 1897	40 00 "	
Charles Brazeau		Labourer	"	Mar. 3, 1902	35 00 "	
Rivière St. Louis Feeder.						
Julien Monpetit		Gate keeper	Rivière St. Louis	May, 11, 1903	10 00 "	

JOS. VINCENT.

NAMES

OF

PERSONS EMPLOYED ON THE VARIOUS GRAVING DOCKS

ON JUNE 30, 1903

WITH

DATES OF APPOINTMENT, SALARIES, ETC.

GRAVING DOCK EMPLOYEES.

STATEMENT showing the Names, Dates of Appointments, Salaries, &c., of Persons employed on the various Graving Docks, June 30, 1903.

Name.	Position.	Where Employed.	Date of Appointment.	Salary.	Remarks.
Esquimalt Graving Dock, British Columbia.				$ cts.	
John Devereux	Dockmaster	Esquimalt	Sept. 17, 1887	166 66 a month	
John Jeffcott	Engineer	"	Jan. 4, 1901	100 00 "	
F. N. Jones	Assistant engineer	"	" 8, 1901	80 00 "	
A. D. Grieves	Carpenter	"	Dec. 1, 1887	80 00 "	
W. Young	Labourer	"		50 00 "	
J. Stock	"	"	July 1, 1894	50 00 "	
Chas. Jordan	Stoker	"		60 00 "	
G. Springer	"	"		60 00 "	
T. Young	Night watchman	"		50 00 "	
Lévis Graving Dock.					
Alf. Samson	Dockmaster	Lévis	Feb. 15, 1900	1,000 00 a year	
Wm. Macdougal	Mechanical engineer	"	June 1, 1888	75 00 a month	
T. Desprès	Asst. mechanical engineer	"	July 21, 1901	60 00 "	
Narcisse Lemelin	Fireman	"	June 1, 1888	40 00 "	
Kingston Graving Dock.					
F. S. Rees	Dockmaster	Kingston	April 1, 1897	1,300 00 a year	
Robert McLeod	1st engineer	"	July 1, 1892	75 00 a month	
Wm. Geoghegan	Fireman	"	" 1, 1892	45 00 "	
C. Staley	Watchman	"	" 1, 1892	45 00 "	

JOS. VINCENT.

LIST

OF

ENGINEERS, ENGINEMEN, FIREMEN AND CARETAKERS

EMPLOYED IN THE

PUBLIC BUILDINGS THROUGHOUT THE DOMINION ON JUNE 30, 1903

DATES OF APPOINTMENT, SALARIES, ETC.

ENGINEERS AND CARETAKERS, PUBLIC BUILDINGS.

STATEMENT showing the Names, &c., of the Engineers, Enginemen, Firemen, Caretakers, Hoist Attendants and Watchmen employed at Dominion Public Buildings on June 30, 1903.

Place.	Building.	Name.	Date of Birth.	Position.	Date of Appointment.	Monthly Salary.	Time employed each Year.	Yearly Salary.
						$		$
Amherst..... N.S.	Post office	J. H. Chapman	Jan. 1, 1846	Caretaker.....	Sept. 1, 1900	33 33	12 months..	400 00
Antigonish ..... "	Public building...	Angus McDonald.....	Mar. —, 1820	"	Feb. 5, 1891	33 33	12 " ..	400 00
Annapolis..... "	Post office and custom house.	John McKay	Oct. 26, 1847	"	April 1, 1891	33 33	12 "	400 00
Baddeck ..... "	Public building	D. F. McKenzie.....	May 20, 1848	"	Jan. 21, 1899	20 83	12 " ..	250 00
Dartmouth..... "	"	I. C. Henley.....	Dec. 11, 1846	" ...	May 22, 1894	20 83	12 " ..	250 00
Digby..... "	"	F. Dennison.....	Nov. 8, 1841	"	Mar. 14, 1902	33 33	12 " ..	400 00
Halifax ..... "	Dominion building...	Richard Power.....	Aug. 5, 1834	Engineer.....	Oct. 1, 1871	62 50	12 " ..	750 00
" ..... "	"	John Powell.....	" 21, 1836	Fireman.....	" 1, 1871	50 00	8 " ..	400 00
" ..... "	"	J. F. Sullivan.....	April 16, 1866	Caretaker.....	July 1, 1892	33 33	12 " ..	400 00
" ..... "	"	W. H. Gray.....	Nov. 26, 1848	Watchman.....	Sep. 10, 1891	39 00	12 " ..	468 00
" ..... "	Drill hall..... " ..	John Crowell.....	Feb. 26, 1852	Fireman.....	Dec. 13, 1901	50 00	8 " ..	400 00
" ..... "	"	R. Harmon.....	Dec, 23, 1868	Caretaker.....	Dec. 3, 1898	50 00	12 " ..	600 00
" ..... "	Armouries.....	R. Morrison	Mar. 26, 1857	Fireman.....	Mar. 4, 1903	50 00	8 " ..	400 00
" ..... "	Examining warehouse.....	M. O'Neil	Dec. 30, 1850	Caretaker.. ..	Oct. 1, 1897	33 33	12 " ..	400 00
" ..... "	Immigrant building.....	John Oxley.....	April 17, 1856	Fireman.....	Feb. 2, 1897	50 00	12 " ..	600 00
Kentville ..... "	Public building.....	W. Hiltz.....	" 4, 1864	Caretaker.....	Nov. 14, 1900	33 33	12 " ..	400 00
Liverpool..... "	"	James Clements..	June 5, 1835	"	June 27, 1900	33 33	12 " ..	400 00
Lunenburg..... "	"	J. E. Hebb.....	Nov. 3, 1833	" ...	" 7, 1895	25 00	12 " ..	300 00
New Glasgow..... "	Post office	J. A. Mutch.....	Dec. 13, 1840	"	Oct. 3, 1901	25 00	12 " ..	300 00
North Sydney..... "	Public building.....	Alex Green.....	July 16, 1825	"	" 1, 1897	33 33	12 " ..	400 00
Pictou..... "	Post office and custom house.	Jas. Arbuckle.....	Feb. 18, 1836	"	Dec. 20, 1896	41 66	12 " ..	500 00
Springhill..... "	Post office.....	S. McDowell.....	June 26, 1846	"	Feb. 11, 1902	33 33	12 " ..	400 00
Sydney South..... "	Post office and custom house.	L. Keefe.....	May 1, 1883	" ...	Jan. 1, 1903	33 33	12 " ..	400 00
Truro ..... "	" "	Alex. P. Smith.....	" 17, 1837	"	April 1, 1897	29 16	12 " ..	350 00
Windsor..... "	Post office.....	J. A. Mosher	Nov. 16, 1841	"	Feb. 13, 1899	33 33	12 " ..	400 00
Yarmouth..... "	Public building..... ...	W. H. Whallen..... ...	Dec. 23, 1841	"	Mar. 1, 1900	33 33	12 " ..	400 00
Charlottetown..... P.E.I.	Dominion building.....	Wm. J. Fraser.....	Jan. 1, 1836	" & fireman	April 3, 1894	33 33	12 " ..	400 00
" ..... "	"	Geo. Walker.....	Aug. 28, 1826	Messenger.....	Jan. 19, 1875	41 67	12 " ..	500 00
" ..... "	"	M. A. Allan.....	Aug. 1, 1855	"	" 24, 1898	41 67	12 " ..	500 00
" ..... "	"	Angus McKenzie.....	Mar. 12, 1856	Watchman.....	Nov. 1, 1896	45 00	12 " ..	540 00
Montague..... "	Public building.....	W. Gillis.....	Oct. —, 1831	Caretaker.	May 9, 1898	13 33	12 " ..	160 00
Summerside..... "	Dominion building..... ...	A. MacSween.....	Sept. 25, 1835	"	Sept. 1, 1897	33 33	12 " ..	400 00
Bathurst..... N.B.	Post office..... ...	S. P. Achey.....	Aug. 18, 1873	"	Jan. 1, 1903	33 33	12 " ..	400 00
Chatham..... "	"	C. Johnston.....	May 18, 1856	"	Mar. 27, 1895	25 00	12 " ..	300 00

Carleton, St. John..	N.B.	Post office	James R. Reid	Aug.	15,	1823	Caretaker	Oct.	1,	1889	8 33	12 months.	100 00
Dalhousie	"	"	Wm. Gould	Jan.	1,	1863	"	Nov.	26,	1890	33 33	12 "	400 00
Fredericton	"	"	L. Yérza	Dec.	18,	1843	"	July	1,	1900	33 33	12 "	400 00
Moncton	"	"	E. B. Hicks	Jan.	11,	1832	"	Jan.	11,	1886	33 33	12 "	400 00
Newcastle	"	"	Patrick Keating	Mar.	13,	1840	"	Oct.	23,	1886	33 33	12 "	400 00
St. John	"	Custom house	Neil J. Morrison	July	25,	1858	Eng. & caretaker	April	27,	1894	60 00	12 "	720 00
"	"	"	Christopher White	Nov.	20,	1844	Fireman	Nov.	9,	1885	50 00	12 "	600 00
"	"	"	James A. Paul	Aug.	1,	1837	Caretaker	Oct.	13,	1891	41 67	12 "	500 00
"	"	Post office	James Wolfe	Mar.	10,	1850	Engineer	Dec.	1,	1893	55 00	12 "	660 00
"	"	"	Edward Haney	Feb.	22,	1849	Hoist attendant.	Nov.	27,	1882	50 00	12 "	600 00
St. Stephen	"	"	Samuel Toppiug	April	2,	1839	Caretaker.	May	25,	1887	33 33	12 "	400 00
Sussex	"	"	Mrs. N. Dryden	June	21,	1840	"	Mar.	26,	1901	16 66	12 "	200 00
Woodstock	"	"	Charles Trafton	Jan.	20,	1839	"	May	1,	1897	33 33	12 "	400 00
Aylmer	P.Q.	"	Miss M. G. Woods	May	16,	1860	"	April	29,	1895	5 00	12 "	60 00
Coaticook	"	Public building	Israel Baldwin	Nov.	16,	1839	"	June	27,	1889	33 33	12 "	400 00
Drummondville	"	"	A Paré	April	27,	1842	"	"	5,	1902	25 00	12 "	300 00
Granby	"	"	J. A. Beauchemin	May	1,	1862	"	May	12,	1903	25 00	12 "	300 00
Fraserville	"	Post office	Z. Raymond	Nov.	—,	1831	"	Nov.	2,	1897	25 00	12 "	300 00
Hochelaga	"	"	J. H. Brown	Oct.	7,	1851	"	Mar,	27.	1902	16 66	12 "	200 00
Hull	"	" &c	J. I. Madore	Dec.	1,	1843	"	"	8,	1900	12 50	12 "	150 00
Joliette	"	"	A. Ratel	"	29,	1845	"	Sept.	1,	1897	33 33	12 "	400 00
Lachine	"	"	P. O. Robert	Sept.	7,	1846	"	Jan.	26,	1899	8 33	12 "	100 00
Laprairie	"	"	Jos. Brisson	Nov.	11,	1869	"	Nov.	22,	1901	4 16	12 "	50 00
Montreal	"	Dominion building	S. T. Murphy	May	6,	1865	Foreman engin'r	Mar.	2,	1903	100 00	12 "	1,200 00
"	"	"	Ed. Lanctot	April	14,	1837	Caretaker	Dec.	3,	1898	41 67	12 "	500 00
"	"	Examining warehouse	M. Boyer	Feb.	18,	1848	Fireman	Mar.	4,	1882	50 00	12 "	600 00
"	"	"	Nap. Loiselle	Dec.	12,	1866	"	Dec.	4,	1894	45 00	12 "	540 00
"	"	"	Jos. Loiseau	Jan.	4,	1869	Caretaker	Nov.	15,	1901	45 00	8 "	360 00
"	"	Post office	F. Green	Oct.	4,	1837	Engineer	Jan.	1,	1885	60 00	12 "	720 00
"	"	"	L. D. Thibault	Jan.	28,	1861	Electrician	June	1,	1885	75 00	12 "	900 00
"	"	"	G. S. Gingras	Dec.	13,	1867	" &c	Jan.	7,	1895	60 00	12 "	720 00
"	"	"	I. Trudeau	Jan.	22,	1863	Caretaker	Oct.	1,	1902	50 00	12 "	600 00
"	"	"	Oscar Renaud	Feb.	19,	1862	Elevator man	Sept.	10,	1898	50 00	12 "	600 00
"	"	"	Art. Forget	July	25,	1867	"	Dec.	15,	1893	50 00	12 "	600 00
"	"	"	S. N. Nickle	Dec.	25,	1871	"	Mar.	1,	1894	55 00	12 "	660 00
"	"	"	L. Brault	"	29,	1854	"	Sept.	1,	1901	50 00	12 "	600 00
"	"	"	C. Vadeboncœur	May	17,	1842	Caretaker w. c.	Feb.	6,	1864	1.50 p. d.	12 "	547 50
"	"	"	J. Dulrisac	Feb.	2,	1863	Messenger	Dec.	15,	1893	2.00 p. d.	12 "	730 00
"	"	Inland revenue	Louis St. Jean	Sept.	17,	1840	Fireman	"	1,	1892	50 00	12 "	600 00
"	"	Examining warehouse	H. Marchand	"	6,	1849	"	"	2,	1882	45 00	12 "	540 00
"	"	Custom house	C. Daudelin	June	19,	1843	"	July	16,	1892	29 16	12 "	350 00
"	"	Custom house and ex. wareh.	B. Lajeunesse	Nov.	20,	1861	"	Nov.	23,	1896	50 00	12 "	600 00
"	"	Drill hall and armoury	J. Gagnier	April	4,	1867	Engineman	Fev.	14,	1899	45 00	12 "	540 00
"	"	" "	A. James	Nov.	29,	1872	Fireman	Jan.	1,	1900	45 00	8 "	360 00
Quebec	"	Examining warehouse	D. P. Kennedy	Feb.	9,	1865	Engineer	April	1,	1897	75 00	12 "	900 00
"	"	"	T. P. McLaughlin	Aug.	25,	1871	Fireman	Aug.	26,	1892	53 33	12 "	640 00
"	"	Cullers office	James O'Neil	"	15,	1861	"	"	1,	1894	45 00	12 "	540 00
"	"	Custom office	John R. Mountain	Nov.	1,	1848	"	Nov.	10,	1888	45 00	12 "	540 00
"	"	Govr. gen'ls quarters	P. Parent	May	29,	1852	"	Jan.	1,	1902	33 33	12 "	400 00
"	"	Post office	J. Roy	Feb.	25,	1836	Caretaker	Sept.	1,	1897	58 33	12 "	700 00

STATEMENT showing the Names, &c., of the Engineers, Enginemen, Firemen, Caretakers, Hoist Attendants and Watchmen employed at the Dominion Public Buildings, &c.—*Continued.*

Place.	Building.	Name.	Date of Birth.	Position.	Date of Appointment.	Monthly Salary.	Time employed each Year.	Yearly Salary.
						$ c.		$ c.
Quebec P.Q.	Post office	F. J. Cooper	July 8, 1858	Fireman	June 25, 1895	55 00	12 months	660 00
Peribonca "	Immigration building	E. Roy	Dec. 14, 1877	Caretaker	Oct. 1, 1902	25 00	12 "	300 00
Roberval "	"	J. B. Carbonneau	Aug. 12, 1864	"	Nov. 20, 1901	25 00	12 "	300 00
Rimouski "	Post office	A. Lepage	Feb. 7, 1866	"	Jan. 1, 1901	12 50	12 "	150 00
Richmond "	Public building	H. Desmarais	July 14, 1869	"	May 7, 1898	20 83	12 "	250 00
Sherbrooke "	"	O. Desève	Aug. 6, 1848	"	April 2, 1898	33 33	12 "	400 00
Sorel "	Post office	C. Robitaille	Jan. 22, 1848	"	Sept. 1, 1897	33 33	12 "	400 00
Saint-Henri "	"	A. C. A. Bissonnette	May 25, 1858	"	Mar. 4, 1895	.....	.....	.....
Saint-Hyacinthe "	Public building	F. X. Tétrault	Nov. 8, 1846	Fireman	Aug. 5, 1893	33 33	12 months	400 00
Saint-Jean "	Post office	L. Forrant	Jan. 21, 1849	Caretaker	April 14, 1897	29 16	12 "	350 00
Saint-Jérôme "	Public building	J. Savard	Oct. 24, 1859	"	Sept. 1, 1900	33 33	12 "	400 00
Trois-Rivières "	Custom house	Ph. Gravelle	June 3, 1828	"	Feb. 1, 1891	25 00	12 "	300 00
" "	Post office	A. Gauthier	Feb. 4, 1850	"	" 1, 1898	33 33	12 "	400 00
Victoriaville "	Public building	H. H. Dunn	May 9, 1874	"	Oct. 4, 1902	6 25	12 "	75 00
Amhertsburg Ont.	Post office	R. Elliott	Aug. 22, 1835	"	May 7, 1897	33 33	12 "	400 00
Almonte "	"	Wm Moulton	Mar. 23, 1839	"	Jan. 29, 1891	33 33	12 "	400 00
Arnprior "	Public building	R. B. McCrerary	Jan. 11, 1862	"	Mar. 15, 1899	33 33	12 "	400 00
Brockville "	Post office	H. Purvis	Sept. 12, 1826	"	Dec. 15, 1900	33 33	12 "	400 00
Brantford "	"	John Squire	April 24, 1842	"	Oct. 27, 1889	50 00	12 "	600 00
Barrie "	"	E. Sevigny	Mar. 19, 1847	"	May 1, 1903	41 66	12 "	500 00
Belleville "	"	S. Haight	Aug. 26, 1857	"	Jan. 24, 1901	50 00	12 "	600 00
Berlin "	"	J. Clemens	June 21, 1840	"	May 15, 1900	33 33	12 "	400 00
Brampton "	"	James McBride	Oct. 5, 1840	"	Jan. 29, 1891	33 33	12 "	400 00
Carleton Place "	"	Jas. F. Halfpenny	April 17, 1858	"	May 13, 1892	25 00	12 "	300 00
Chatham "	"	W. W. Mitchell	May 25, 1848	" &c	Jan. 7, 1885	41 66	12 "	500 00
Cornwall "	"	R. Conroy	Nov. 6, 1848	"	April 1, 1897	33 33	12 "	400 00
Cayuga "	"	G. A. Gibson	May 29, 1861	"	Sept. 3, 1891	4 16	12 "	50 00
Cobourg "	"	John Boyd	Dec. 9, 1836	"	Aug. 1, 1901	33 33	12 "	400 00
Dundas "	"	Wm Graham	" 5, 1853	"	July 1, 1898	4 16	12 "	50 00
Galt "	"	T. Barrett	June 17, 1861	"	Aug 1, 1902	33 33	12 "	400 00
Guelph "	"	R. McLeod	July 30, 1865	"	May 25, 1901	33 33	12 "	400 00
Goderich "	" &c	G. Bissett	April 14, 1851	"	Sept. 1, 1897	33 33	12 "	400 00
Hamilton "	Dominion building	Alfred Barnard	Dec. 27, 1847	"	Dec. 10, 1894	50 00	12 "	600 00
" "	"	J. Wigglesworth	Aug. 7, 1863	Fireman	Oct. 1, 1896	50 00	8 "	400 00
" "	"	Thomas Nicholson	Dec. 17, 1857	Engineer	Mar. 2, 1887	50 00	12 "	600 00
Ingersoll "	Public building	John McDonald	June 30, 1841	Caretaker	Nov. 20, 1900	33 33	12 "	400 00

Kingston	Ont.	R. Military College	Wm F. Hazlett	May	27, 1884	Engineer	Nov.	20, 1900	75 00	12 months	900 00
"	"	"	J. Quigley	Oct.	30, 1857	Fireman	June	1, 1903	55 00	12 "	660 00
"	"	"	M. Redmond	"	2, 1867	"	Jan.	29, 1902	45 00	12 "	540 00
"	"	"	L. Cochrane	Mar.	1, 1879	Electrician	July	29, 1902	55 00	12 "	660 00
London	"	Custom house	M. Mulkern	Sept.	4, 1837	Engineman	Sept.	18, 1888	50 00	12 "	600 00
"	"	Post office	Wm Greer	Oct.	12, 1839	Caretaker	Mar.	16, 1884	33 33	12 "	400 00
London	"	"	John Price	Oct.	6, 1836	Engineer	Jan.	14, 1884	50 00	12 "	600 00
Lindsay	"	" and C. house	Wm. Galbraith	Jan.	8, 1844	Caretaker	Nov.	17, 1893	33 33	12 "	400 00
Napanee	"	" "	Mrs. C. E. Webster	July	12, 1846	"	Oct.	4, 1901	33 33	12 "	400 00
Niagara Falls	"	"	Wm. J. Sheppard	Jan.	4, 1854	"	Jan.	15, 1897	33 33	12 "	400 00
Orangeville	"	"	D. McPherson	April	30, 1851	"	July	15, 1900	33 33	12 "	400 00
Orillia	"	"	John Frawley	Mar.	14, 1844	"	Nov.	1, 1898	25 00	12 "	300 00
Paris	"	Public building	Sam Lee	———	1842	"	July	7, 1902	33 33	12 "	400 00
Peterborough	"	Post office	John Irwin	May	17, 1842	"	Sept.	8, 1887	25 00	12 "	300 00
"	"	Custom house	Wm. Taylor	Nov.	25, 1839	"	Jan.	26, 1889	25 00	12 "	300 00
Petrolea	"	Post office	H. McNaughton	Sept.	14, 1862	"	May	1, 1903	33 33	12 "	400 00
Picton	"	Public building	D. Webarks	Feb.	8, 1850	"	April	11, 1902	33 33	12 "	400 00
Port Colborne	"	Post office	Wm. Armstrong	Sept.	9, 1846	"	June	11, 1888	20 00	12 "	240 00
Port Hope	"	"	Levi Reynolds	Feb.	15, 1839	"	Nov.	17, 1885	33 33	12 "	400 00
Port Arthur	"	Public building	John Whitehead	April	15, 1839	"	Sept.	11, 1893	25 00	12 "	300 00
Pembroke	"	"	Samuel Hamilton	June	4, 1834	"	Oct.	29, 1890	33 33	12 "	400 00
Prescott	"	Post office	R. Birks	April	6, 1822	"	May	1, 1899	33 33	12 "	400 00
Rat Portage	"	Public building	Mrs. J. Link	May	10, 1850	"	Dec.	7, 1901	33 33	12 "	400 00
Smith's Falls	"	"	R. W. Lewis	Aug.	19, 1863	"	Jan.	8, 1896	25 00	12 "	300 00
Stratford	"	Post office, &c.	J. P. Murray	July	29, 1855	Engineer	Jan.	26, 1900	50 00	12 "	600 00
St. Catharines	"	"	Louis Reno	Oct.	24, 1842	Caretaker	Feb.	27, 1897	33 33	12 "	400 00
St. Thomas	"	"	G. Luton	May	25, 1857	"	April	14, 1903	33 33	12 "	400 00
Strathroy	"	Public building	Wm. J. Johnston	"	12, 1840	"	Oct.	25, 1890	33 33	12 "	400 00
Toronto	"	Dominion buildings	H. E. Hamilton	April	14, 1838	Forem., engineer	April	10, 1902	100 00	12 "	1,200 00
"	"	Inland revenue building	C. H. Baillie	Sept.	22, 1852	Fireman	Jan.	13, 1891	55 00	12 "	660 00
"	"	Custom-house	Fred. Faragher	Oct.	16, 1865	"	Nov.	1, 1889	55 00	12 "	660 00
"	"	"	Ed. Switzer	"	10, 1859	Hoist attendant	Aug.	18, 1901	55 00	12 "	660 00
"	"	Examining warehouse	James Cosgrove	Feb.	10, 1844	Engineer	Dec.	28, 1874	70 00	12 "	840 00
"	"	"	Ed. Appleton	Sept.	26, 1864	Fireman	Sept.	23, 1886	55 00	12 "	660 00
"	"	"	Alexander Dey	"	27, 1863	Hoist attendant	Dec.	1, 1887	50 00	12 "	600 00
"	"	"	Wm. Chenery	Dec.	19, 1851	"	"	1, 1887	50 00	12 "	600 00
"	"	"	M. Boland	Sept.	29, 1847	"	Oct.	24, 1902	50 00	12 "	600 00
"	"	"	Thos. Jones	Nov.	10, 1853	Watchman	April	4, 1902	50 00	12 "	600 00
"	"	Union station	J. Gormaly	"	26, 1872	Hoist attendant	Oct.	17, 1901	50 00	12 "	600 00
"	"	P. O. Station "C"	J. C. Davidson	May	21, 1876	Caretaker	April	1, 1902	41 66	12 "	500 00
"	"	" Union station "A"	D. Glionna	Aug.	8, 1867	Elevatorman	Oct.	1, 1898	50 00	12 "	600 00
"	"	Post office	J. Somers	April	8, 1835	Engineer	"	9, 1897	45 00	8 "	360 00
"	"	"	George Letray	May	20, 1858	Fireman	Nov.	1, 1896	50 00	8 "	400 00
"	"	"	G. Phillips	Oct.	11, 1856	"	Oct.	1, 1898	45 00	8 "	360 00
"	"	Drill hall	Richard Eyre	"	11, 1849	"	Mar.	25, 1895	50 00	12 "	600 00
"	"	Examining warehouse	M. W. Devane	Aug.	28, 1867	Watchman	June	1, 1900	50 00	12 "	600 00
Trenton	"	Public building	David Allen	May	13, 1844	Caretaker	Aug.	31, 1889	33 33	12 "	400 00
Windsor	"	Post office	I. Belleperche	Oct.	26, 1848	Engineman	Dec.	24, 1897	50 00	8 "	400 00
"	"	"	W. Curtis	March	6, 1844	Caretaker	Nov.	9, 1880	33 33	12 "	400 00

STATEMENT showing the Names, &c., of the Engineers, Enginemen, Firemen, Caretakers, Hoist Attendants and Watchmen employed at the Dominion Public Buildings, &c.—*Concluded.*

Place.	Building.	Name.	Date of Birth.	Position.	Date of Appointment.	Monthly Salary	Time employed each year.	Yearly Salary.
						$ c.		$ c.
Walkerton..... Ont.	Public building.....	T. Gibson	Aug. 14, 1838	Caretaker.	Nov. 1, 1897	33 33	12 months ..	400 00
Woodstock..... "	"	Robert Kerr.....	June 6, 1864	"	Dec. 11, 1901	33 33	12 "	400 00
Brandon ..... Man.	"	T. Giles	Mar. 30, 1843	"	Aug. 1, 1897	50 00	12 "	600 00
Portage la Prairie.. "	"	R. Watson	Jan. 10, 1826	"	Oct. 1, 1902	33 33	12 " ...	400 00
Winnipeg... ..... "	Post office	J. D. McDougall.....	May 1, 1843	Engineman	Jan. 21, 1899	75 00	12 "	900 00
" ... . "	"	John Mikulezky.	" 6, 1879	Fireman	Nov. 13, 1900	45 00	12 "	540 00
" ..... "	"	Joseph Coutu	" 10, 1843	Hoist attendant.	Mar. 16, 1887	45 00	12 "	540 00
" ..... "	"	Joseph Gagnier	April 11, 1853	Watchman.	June 7, 1892	45 00	12 " ...	540 00
" ..... "	Custom-house.....	J. G. Russell.....	Oct. 15, 1857	Fireman	Dec. 12, 1900	45 00	12 "	540 00
Calgary..... .....N.W.T.	Public building.....	E. N. Brown.....	Mar. 8, 1845	Caretaker.....	Jan. 24, 1891	45 00	12 "	540 00
" .... "	Court-house.....	J. B. Mitchell.... ...	May 21, 1841	"	Dec. 1, 1902	45 00	12 "	540 00
Edmonton. ... .. "	Land and registry office.	R. Wylie.....	July 7, 1859	"	June 21, 1894	33 33	12 "	400 00
Lethbridge. ... ... "	Court-house & C.-house.....	E. J. Hodder.....	Aug. 4, 1854	"	Mar. 1, 1901	35 00	12 " ...	420 00
Moosomin. ..... "	"	J. C. Jopp	Jan. 6, 1848	"	April 29, 1897	50 00	12 "	600 00
Moose-Jaw..... "	"	R. Smale.....	July 21, 1865	"	Nov. 21, 1898	33 33	12 "	400 00
Macleod .... "	"	John Ryan.....	June 24, 1827	"	" 1, 1893	14 58	12 "	175 00
Medicine Hat..... "	"	J. H. G. Bray.....	Jan. 24, 1841	"	June 7, 1900	45 00	12 "	540 00
Prince Albert..... "	Land and registry office.....	George Cassie	" 13, 1833	"	Aug. 25, 1893	33 33	12 "	400 00
Regina..... .... "	Court-house & C.-house.....	P. McAra...	Mar. 24, 1840	"	" 1, 1889	45 00	12 "	540 00
" . ... "	" &c.....	Jas. McLachlan.	Dec. 9, 1840	Fireman	Oct. 3, 1898	40 00	8 " ..	320 00
" . ... "	Land office.....	W. J. Gore.....	July 22, 1863	Caretaker.....	May 6, 1901	45 00	12 "	540 00
Wolseley..... "	Court House	W. Hare.....	Dec. 2, 1857	"	Mar. 1, 1901	45 00	12 "	540 00
Atlin .... B.C.	Public building	J. A. Fraser..... ...	Jan. 1, 1851	"	June 26, 1901	12 50	12 "	150 00
Kamloops..... "	Post office	W. Saul.....	Dec. 15, 1837	"	April 1, 1902	50 00	12 " .. .	600 00
Nanaimo..... ... . "	"	J. Thompson..... .. .	Sept. 2, 1836	"	May 1, 1897	50 00	12 "	600 00
Nelson..... "	Public building..... ..	B. B. Smith..... ..	" 12, 1845	"	Mar. 7, 1903	50 00	12 "	600 00
New Westminster.. "	Post office..... ...	G. D. McMurphy.....	Dec. 21, 1870	"	Jan. 18, 1901	50 00	12 "	600 00
Rossland..... "	Public building.....	D. Mackenzie.	Oct. 14, 1848	"	April 1, 1903	50 00	12 "	600 00
Vancouver . ... .. "	"	Atwell King.....	April 6, 1843	"	Aug. 25, 1893	50 00	12 "	600 00
" ..... "	"	P. Powers	Mar. 21, 1836	Watchman	Feb. 10, 1901	50 00	12 "	600 00
Victoria .... . . "	New Dominion building.....	Wm. McKay.....	Dec. 31, 1857	Caretaker.....	" 4, 1898	50 00	12 "	600 00
" .... "	Dominion building.....	A. Johnson.....	May 12, 1858	Asst. caretaker .	April 1, 1899	45 00	12 "	540 00
" .. .. "	"	J. D. Milne....	Oct. 12, 1840	Fireman	Oct. 4, 1898	45 00	8 "	360 00
" ..... "	"	J. McMillan.....	July 8, 1876	Elevatorman....	Nov. 27, 1898	60 00	12 "	720 00
" .. .. "	Dominion building	Geo. Noot	Aug. 9, 1845	"	Oct. 13, 1900	45 00	12 "	540 00
" ..... "	Old Custom-House	Geo Lyoll....	Feb. 12, 1843	Caretaker.... .	May 8, 1900	50 00	12 "	600 00

Dawson	Y.T.	Post office	J. W. Wilson	....	Caretaker	Jan. 1, 1902	100 00	12 months	1,920 00
"	"	"	W. Bishop	....	Watchman	May 1, 1901	100 00	12 "	1,920 00
"	"	"	Mrs. R. Palardis	....	Charwoman	" 1, 1902	150 00	12 "	1,800 00
"	"	Government House	S. Waldron	....	Caretaker	Oct. 15, 1901	125 00	12 "	1,500 00
White Horse	"	Public building	C. J. McLennan	....	"	" 30, 1902	100 00	12 "	1,200 00

JOS. VINCENT.

OFFICIAL CORRESPONDENCE

DEPARTMENT OF PUBLIC WORKS

FROM

JULY 1, 1867, TO JUNE 30, 1903.

OFFICIAL CORRESPONDENCE.

Letters Received and Sent from July 1, 1867, to June 30, 1903.

Year.	Received.	Sent.
1867—From July 1 to December 31	2,075	1,511
1868 " January 1 to December 31	3,498	2,317
1869 " " "	3,448	2,171
1870 " " "	4,961	3,185
1871 " " "	6,268	3,983
1872 " " "	8,333	4,428
1873 " " "	10,072	5,707
1874 " " "	9,800	5,043
1875 " " "	9,006	5,006
1876 " " "	7,971	4,773
1877 " " "	7,517	4,425
1878 " " "	6,886	4,021
1879 " " to October 6	7,186	4,547
1879 " October 7 to December 31	2,033	810
1880 " January 1 "	8,451	4,410
1881 " " "	9,599	5,529
1882 " " "	10,505	5,699
1883 " " "	11,63.	6,227
1884 " " "	13,114	6,903
1885 " " "	8,977	5,321
1886 " " "	9,644	5,352
1887 " " to June 30	4,866	2,735
1887 " July 1 " 1888	10,493	6,343
1888 " " " 1889	10,522	7,042
1889 " " " 1890	10,098	7,448
1890 " " " 1891	10,576	7,286
1891 " " " 1892	11,637	6,700
1892 " " " 1893	11,720	6,220
1893 " " " 1894	9,517	6,028
1894 " " " 1895	10,190	5,148
1895 " " " 1896	10,223	5,573
1896 " " " 1897	11,404	5,033
1897 " " " 1898	9,640	5,250
1898 " " " 1899	9,639	4,784
1899 " " " 1900	12,139	5,938
1900 " " " 1901	13,179	6,255
1901 " " " 1902	15,880	5,067
1902 " " " 1903	13,140	6,373

SESSIONAL PAPER No. 19

LETTERS Sent from Chief Engineer's Office, from January, 1880, to June 30, 1903.

Year.	——	No.
1880	From January 10 to June 30	418
1880	" July 1 "	1,795
1881	" " "	2,352
1882	" " "	2,651
1883	" " "	3,611
1884	" " "	3,119
1885	" " "	2,867
1886	" " "	3,281
1887	" " "	3,552
1888	" " "	4,229
1889	" " "	3,374
1890	" " "	3,948
1891	" " "	4,009
1892	" " "	4,232
1893	" " "	3,966
1894	" " "	4,603
1895	" " "	4,239
1896	" " "	4,994
1897	" " "	4,696
1898	" " "	5,277
1899	" " "	7,366
1900	" " "	4,341
1901	" " "	6,759
1902	" " "	4,327
1881		1,795
1882		2,352
1883		2,651
1884		3,611
1885		3,119
1886		2,867
1887		3,281
1888		3,552
1889		4,229
1890		3,374
1891		3,948
1892		4,009
1893		4,232
1894		3,966
1895		4,603
1896		4,239
1897		4,994
1898		4,696
1899		5,277
1900		7,366
1901		4,341
1902		6,759
1903		4,327

NOTE.—The letters, including returns, received in the Chief Engineer's Office may be estimated at the rate of two received to one sent.

LETTERS Received and Sent, Chief Architect's Office, from January 1, 1880, to June 30, 1903.

Year.	Received.	Sent.
1880—From January 1 to June 30		1,273
1880 " July 1 "		2,943
1881		2,859
1882	3,538	4,600
1883	3,860	6,004
1884	4,500	6,718
1885	6,075	6,450
1886	6,816	6,380
1887	6,947	6,870
1888	6,484	7,667
1889	7,448	6,578
1890		7,751
1891	6,113	4,260
1892	7,428	6,453
1893	6,900	4,517
1894	7,538	5,327
1895	7,843	5,783
1896	10,700	8,200
1897	10,867	8,547
1898	10,913	8,762
1899	12,386	9,878
1900	12,287	9,860
1901	12,560	10,330
1902	13,430	11,106

CANADA

Can Doc 10.71.

REPORT

OF THE

MINISTER OF PUBLIC WORKS

ON THE

WORKS UNDER HIS CONTROL

FOR THE FISCAL YEAR ENDED JUNE 30

1904

SUBMITTED IN ACCORDANCE WITH THE PROVISIONS OF CHAPTER 36 SECTION 37, OF THE REVISED STATUTES OF CANADA

PRINTED BY ORDER OF PARLIAMENT

HARVARD UNIVERSITY
SEP 12 1941
GRADUATE SCHOOL OF PUBLIC ADMINISTRATION

OTTAWA
PRINTED BY S. E. DAWSON, PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1905

[No. 19—1905.]

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HARVARD UNIVERSITY
SEP 12 1941
GRADUATE SCHOOL
OF PUBLIC ADMINISTRATION

To His Excellency the Right Honourable Sir Albert Henry George, Earl Grey, G.C.M.G., &c., &c., Governor General of Canada.

MY LORD,

I have the honour to lay before Your Excellency the Report of the Department of Public Works of Canada, for the Fiscal Year ended June 30, 1904.

I have the honour to be,

My Lord,

Your Excellency's most obedient servant,

CHAS. S. HYMAN,

Acting Minister of Public Works.

OTTAWA, February 6, 1905.

CONTENTS

Part I.—DEPUTY MINISTER'S REPORT.

" II.—ACCOUNTANT'S REPORT.

" III.—CHIEF ARCHITECT'S REPORT.

" IV.—CHIEF ENGINEER'S REPORT

" IV.—APPENDIX. ST. LAWRENCE RIVER SHIP CHANNEL.

" V.—GENERAL SUPT. OF TELEGRAPHS' REPORT.

" VI.—COLLECTOR OF REVENUES REPORT.

" VII.—MISCELLANEOUS REPORTS.

ALPHABETICAL INDEX TO REPORT

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
A							
Abbots Harbour, N.S.		14		6			
Abrams River, N.S.		14		7			
Accountant's report	5	1					
Acton Vale, P.Q., public building		8	8				
Acts of Parliament							19
Agassiz, B.C., Expl. farm		12, 33					
Agency Public Works, B.C.		27					
Alameda, N.W.T., lands office		32					
Alberni-Cape Beale, telegraph		26			17, 38		
Alberni-Clayoquot "		26			16, 38		
Alexandria, Ont., public building		9	12				
Alma, N.B.		18		103			
Almonte, Ont., public building		9, 29					
Amaguadus, N.S.		14		7			
Amherstburg, Ont., dredging		22					
" " public building		9, 29					
Amherst, N.S., "		8, 28					
Amherst, P.Q.		20		104			
Anderson Lake, B.C.		24		168			
Anderson's Hollow, N.B.		17		77			
Annapolis, N.S., public building		8, 28					
Anse-à-Beaufils, P.Q.		18, 19		104			
Anse-à-l'Eau, P.Q.		21		139			
Anse-aux-Gascons, P.Q.		18		104			
Anse-au-Grip-Fonds, P.Q.		18		113			
Anse-aux-Foins, P.Q.		21		132			
Anse-St-Jean, P.Q.		18		105			
Anticosti-Gaspé, telegraph		25			9, 24		
Antigonish, N.S., public building		8, 28					
Architect's report	14		1				
" staff		27					
Arichat, N.S., public building		8, 28					
Arisaig, N.S.		14		7			
Arnolds Point, N.S.		14		34			
Arnprior, Ont., public building		9, 30					
Arrow Lakes, B.C.		24					
Art Gallery, Ottawa		10, 30					23
Ashcroft-Dawson, telegraph		26					
Atkins Shore, P.E.I.				69			
Atlin, B.C., post office		12, 33					
Atlinto, B.C.		24					
Aylmer, P.Q., public building		8, 29					
B							
Babbins Cove, N.S.		14		8			
Baddeck, N.S., public building		8, 28					
Baie St. Paul, P.Q.		18		105			
Baie des Rochers, P.Q.		18					
Bailey Brook, N.S.		14		8			
Barachois de Malbaie, P.Q.		18					
Barrie, Ont., public building		9, 30					
" wharf		22		141			
Barrington, N.S.		14		177			
Barry's Bay, Ont		22					
Bathurst, N.B., public building		8, 28					

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
B							
Battleford, N.W.T., public building		12					
" bridge		25		251			
Bay View, P.E.I		16		70			
Bay Fortune, P.E.I		16					
Bay of Fundy, telegraph		25			10, 29		
Bayfield, N.S		14		9			
Bay du Vin, N.B		17					
Bayfield, Ont		22		142			
Beach Point, P.E.I		16		70			
Beaverton, Ont		22					
Beauharnois, P.Q		18		211			
Belfast Pier, P.E.I		16		179			
Belle Isle, telegraph		25			14		
Belleville, Ont., public building		9, 30					
Belliveau, N.B		17		78			
Belœil, P.Q., slides and booms		18, 24		105			
Belyeas, N.B		18					
Belyeas Cove, N.B		18					
Benoit Cove, N.S		14		10			
Bergeronnes, P.Q		18		106			
Berlin, Ont., public building		9, 30					
Bersiamis, P.Q., telegraph		25			12		
Berthier (en haut), P.Q		18					
" (en bas), "		18		106			
Berthierville, P.Q., public building		8, 29					
Bic, P.Q		18					
Big Harbour, N.S				10			
Big Pond, N.S		14		11			
Black Brook, N.B		17		79			
Black River, slides and booms		24		242			
Blanche Shoals		20					
Blind River, Ont		22		142			
Bonaventure East, P.Q		19		107			
Bon Désir, P.Q		20		107			
Bois Brulé, P.Q		18		106			
Boucherville, P.Q		19					
Boularderie Centre, N.S		14		11			
Bowmanville, Ont		22		143			
" public building		9	12				
Bracebridge, Ont		22		143			
Brampton, public building		9, 30					
Brandon, Man. "		11, 31	21				
" " Expl. Farm		11, 31					
Brantford, Ont., public building		9, 30	12				
Breton Cove, N.S		14		12			
Brideburg, Ont., public building		9					
Bridgeport, N.S		14		33			
Bridges and roads		25		249			
Bridgewater, N.S., public building		7					
British Columbia, dredging		24		236			
" dredging plant				236			
" expenditure		27					
" harbours and rivers	9	24		168			
" public buildings		12, 33					
" telegraphs		26			16, 37		
Brockville, Ont., public building		9, 30					
" " drill shed		9					
" " harbour		22					
Bronte, Ont		22		143			
Browns' Flats, Ont		18					
Bruce Mines, Ont		22					
Buckingham, P.Q., public building		8, 29					
Buctouche, N.B		17		80			
Burk's Falls, Ont		22		143			
Burlington Channel, Ont		22		144, 215			
Burnt Church, N.B		17		80			
Burton, N.B		18					

Names of Places, &c.	Part 1. Page	Part 2. Page	Part 3. Page	Part 4. Page	Part 5. Page	Part 6. Page	Part 7. Page
C							
Cable Ship "Tyrian"	16	25					
Cable telegraph tariff							
Cacouna, P.Q.		19		107			
Calgary, N.W.T., public buildings		12, 32					
" " bridge		25		250			
Calumet, P.Q.		20		211			
Campbell's Cove, P.E.I.		16					
Campbellton, N.B.		17		81			
Campbellton, N.B., public building		7					
Campobello, N.B.		17		103			
Cape Blanc, P.Q.		20					
Cape Cove, P.Q.		20		104			
Cape Beale, B.C., telegraph		26					
Cape Breton, N.S.		25			6, 26		
Cap de la Madeleine, P.Q.		19, 20		107			
Cap Rouge, P.Q.		20					
Cap Desrosiers, P.Q.		20		107			
Cape Ray, telegraph		25			23		
Cape Tormentine, N.B.		17		81			
Caplan, P.Q.		19		131			
Cap Santé, P.Q.		19		107			
Caraquet, N.B.		17		83,179			
Caretakers, &c.							
Cariboo Islands, N.S.		14		12			
Carleton, N.B., public building		7, 28					
Carleton Place, Ont., public building		9, 30					
Carnduff, N.W.T., public building		12, 32					
Cascumpec, P.E.I.		16		70			
Cattle quarantines, N.W.T.		16					
Cayuga, Ont., public building		10, 30					
Cedars, N.B.		18					
Cedars, P.Q.		19		125			
Cement laboratory	16	26		252			
Charette, Joseph, gratuity		26					
Chambord, P.Q.		19		107			
Champlain, P.Q.		19		108			
Charlottetown, P.E.I., public building		7, 28	7				
Chatham, N.B., public building		8, 28					
" " harbour		17					
" Ont., public building		10, 30					
Chateau Richer, P.Q.		19					
Chaudière bridge, Ottawa		25		240			
Chebogue, N.S.		14		12			
Chegoggin, N.S.		14		13			
Cheneaux booms		24					
Cheticamp, N.S.		14					
" " telegraph		25					
" Point, N.S.		14		13, 178			
Cheverie, N.S.		14		14			
Chicoutimi, P.Q., wharf		19		108			
Chief Accountant, report		1					
Chief Architect, report	14		1				
" staff		27					
Chief Engineer, report	7			1			
" staff		26					
Chief Officers							27
China Point, P.E.I.		16		71			
Chockfish, N.B.		19		83			
Chlorydormes, P.Q.		20		110			
Christian Island, Ont.		22		144			
Church Point, N.S.		14		15			
Chutes Cove, N.S.		14		27			
Clarks City, P.Q.		21		110			
Clerks of Works, salaries		13					
Clifton, N.B.		17, 18		84			
Clinton, Ont., public building		10, 30					
Coaticook, P.Q., "		8, 29					
Cobb Island, P.Q.		20					

Names of Places, &c.	Part 1. Page.	Part 2. Page.	Part 3. Page.	Part 4. Page.	Part 5. Page.	Part 6. Page.	Part 7. Page.
C							
Cobourg, Ont., public buildings		10, 30	13				
" harbour		22		145			
Cocagne, N.B		17					
Cockburn Island, Ont		22					
Colborne, Ont		22		150			
Cole's Island, N.B		18					
Collector of Revenue					1		
Collection of Slides and Booms dues		24			3		
Collingwood, Ont		22		145, 215			
Columbia River, B.C		24		168			
Contracts let, &c	16						6
Cornwall, Ont., public building		10, 30					
" harbour		22					
Correspondence, official							43
Coteau Landing, P.Q		19		211			
Coteau du Lac, P.Q		19		110			
Coulonge River, slides, &c		24		242			
Courthouse, N.B		18					
Cove Head, P.E.I		16		71			
Cow Bay, N.S		14		15			
Craik, N.W.T., immg. shed		16					
Crane Island, P.Q		19		111			
Crapaud, P.E.I		16		76			
Creosoted timber	7						
Cross Point, P.Q		19		85			
Cumberland, Ont	22						
D							
Dalhousie, N.B., public building		8, 28					
" harbour		19					
Dartmouth, N.S., public building		7, 28					
Dauphin, Man., immigration shed		11, 32					
Davidson, N.W.T "		12					
Dawson, telegraph		26					
Departmental photographer		27					
Depot Harbour, Ont		22		146			
Deputy Minister's report	1						
Descente des Femmes, P.Q		19		117			
Deschambault, P.Q		19		111			
Descousse, N.S		14		16			
Deseronto, Ont., public building		10, 30					
Desjardins, P.Q		19					
Des Joachims bridge		25		250			
Devil's Island, N.S		14		17			
Didsbury, N.W.T., immigration building		32					
Digby, N.S., harbour		14		17			
" public building		7, 31					
Dipper Harbour, N.B		17					
Dominion public buildings		7, 28	3				
Donalds Head, N.S		14		20			
Doucet's Landing, P.Q		19		212			
Douglastown, P.Q		19					
Dredges and plant		24		181			
Dredging, British Columbia		24		236			
" Manitoba		23		232			
" Maritime provinces		14					
" New Brunswick		17		179			
" Nova Scotia		14		177			
" Ontario		22		215			
" Operations	12			176			
" Plant, names, &c	12						
" Prince Edward Island		16		179			
" Quebec		18		211			
" St. Lawrence River		20		282			
Drum Head, N.S		14		20			
Drummondville, P.Q., public building		8, 29					
Dry Docks				238		6, 13	

Names of Places, &c.	Part 1. Page.	Part 2. Page.	Part 3. Page.	Part 4. Page.	Part 5. Page.	Part 6. Page.	Part 7. Page.
D							
Duck Lake, N.W.T., immigration bldg.		12					
Dumoine River, slides		24		243			
Duncan River, B.C		24		171			
Dundas, Ont., public building		10, 30					
Dundee, P.Q., custom house		8, 29					
Dunbains, N.B		18					
E							
East Bay, N.S		14		20			
East Berlin, N.S		14		21			
East Chezzetcook, N.S		14					
East Jeddore, N.S		14		21			
East River, N.S		14					
East Templeton, P.Q		19					
East Selkirk, Man., immigration building		11					
Eboulements, P.Q		19					
Echouries, P.Q				111			
Economy, N.S		14		21			
Edgetts Landing, N.B		17		85			
Edmonton, N.W.T., bridge		25		250			
" public buildings		12, 32			15		
Edmundston, N.B		19		99			
Employees, graving docks							33
" salaries of		27					
" slides and booms							29
Engineers, firemen, &c							35
Engineer (chief) report	7			1			
" staff (salaries) &c		27					
English River, P.Q		19		132			
Escoumains, P.Q		19		117			
Escuminac, N.B., telegraph		25			10		
Esquimalt, B.C., graving dock		24		238		6, 13	
" custom house		37					
Expenditure	4	23			20		
F							
Fairford River, Man				166			
Farnham, P.Q., public building		9, 29					
Father Point, P.Q		19		111			
Finlay's Point, N.S		14		22			
Five Islands, N.S		14		22			
Flewelling, N.B		18					
Flints Landing, P.Q		22					
Fort Dufferin, N.B		18		85			
Fort Lorne, N.S		14		23			
Fort William, Ont., public building		10, 30					
" dredging				216			
Fraser River, B.C		24		171			
Fraserville, P.Q., public building		8, 29					
Fredericton, N.B., "		8, 28	4				
Frenchmen's Bay, Ont		23		156			
Friar's Head, N.S		14		23			
Fruids Point, N.S		14		23			
G							
Gabarus, N.S				24			
Gagetown, N.B		17		179			
Galt, Ont., public building		10, 30					
Gananoque, Ont, public building		10, 30					
" harbour		22		216			
Gaspereau, P.E.I		16					
Gatineau River, slide		24		241			
" P.Q		19					
Georgeville, P.Q		19		112			
" N.S		14		24			

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
G							
Georgian Bay, Ont		22					
" Canal survey	10						
Gimli, Man		23		166			
Goderich, Ont., harbour		22		146			
" public building		10, 30					
Golden, Windermere, telegraph		26			17, 39		
Gores Landing, Ont		22		147			
Graham, P.Q		19		212			
Graham's Pond, P.E.I				72			
Granby, P.Q., public building		9, 29					
Grand Bend, Ont		22		147			
Grande Anse, N.B		17		86			
Grandes Bergeronnes, P.Q		19, 20		112			
Grande Décharge, P.Q		19		115			
Grand Entry, P.Q		20		112			
Grand Etang, N.S		14		24			
Grand Falls, N.B		17		96			
Grand Narrows, N.S		14		25			
Grand Lake, N.B		17		180			
Grands Mechins, P.Q		19					
Grand River, Ont., bridge		25		148			
" " dredging		22		147			
" N.S		14		26			
" P.E.I				72			
Grande Rivière, P.Q		19		112			
Grande Vallée, P.Q		19					
Granville Centre, N.S		14		26			
Gratuities paid		27					
Graving dock officials						6	33
Great Tancook Island, N.S		14					
Green Cove, N.S		14		26			
Grenville, P.Q				212			
Grenfell, N.W.T		32					
Green River, P.Q				112			
Grindstone, P.Q		20		113			
Grondines, P.Q		19		113			
Grosse Isle, P.Q., quarantine		8	8		30		
Guelph, Ont., public building		10, 30					
Gull Harbour, Man		23		166			
Guysboro', N.S., public building		7, 28					
H							
Haileybury, Ont				148			
Halliday's Wharf, P.E.I		16		179			
Halifax, N.S., public building		7, 28	3				
" graving dock		14					
Hamilton, Ont., public building		10, 30					
" harbour		22		216			
Hampton, N.S		14		27			
Harbours and Rivers, generally	7	24					
Harbourville, N.S		14		28			
Hardy Bay, B.C		24					
Harrington, J., gratuity		26					
Hatfield Point, N.B		18					
Hawke Point, N.S		14		28			
Hawkesbury, Ont		22		216			
" public buildings		10					
Hawkestone, Ont				148			
Heating public buildings		28					
Herring Cove, N.S		14		29			
Hiawatha, Ont		22		148			
Hilton, Ont		22		149			
Hnausa, Man		23		166			
Hochelaga, P.Q., public building		8, 29					
Holdernville, N.B		18					
Honora, Ont		22		149			
Hopewell Cape, N.B		17		87			

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
H							
Hopewell Hill, N.B.		17		87			
Hortons Landing, N.S.		14		29			
House Harbour P.Q.		20		114			
Hudson, P.Q.		19					
Hull, P.Q., public building		8, 29					
" wharf		19		114			
Humphreys Point, N.B	18						
Hydrographic Survey				251			
I							
Iberville, P.Q.		19		114			
Icelandic River, Man		23		167			
Indian Head, N.W.T., building		12, 32					
Indian Brook, N.S.		14		29			
Ingersoll, Ont., public building		10, 30					
Ingonish, N.S. (North)		14		45	8		
Iona, N.S.		14		30			
Iroquois, N.B.		17					
Island Point, N.S.		14		30			
Isle aux Coudres, P.Q., telegraph		25			14		
" " harbour		19		115			
Isle Perrot, P.Q.		19		115			
Isle Verte, P.Q.		19		115			
J							
Janvrins Island, N.S.		14		31			
Jenkins Cove, N.B.		18					
Joliette, P.Q., public building		8, 29					
Judique, N.S.		14		31			
K							
Kaministiquia River, Ont.				216			
Kamloops, B.C., public building		12, 33					
Kamloops-Nicola, telegraph		26			17, 37		
Kamouraska, P.Q.		19		115			
Kaslo, B.C., drill hall		12, 33					
Kempt Head, N.S, telegraph		25					
Kennedy Lake, B.C.		24		168			
Kentville, N.S., public building		7, 28					
Kincardine, Ont.		22		149			
Kingsport, N.S		14		32			
Kingston, Ont., harbour		22		216			
" graving dock		22		238		6, 15	
" public buildings		10, 30					
Kingsville, Ont.		22		150			
Knights Point, P.E.I.		16		75			
Knowlton's Landing, P.Q.		19		116			
L							
Lachine, P.Q., public building		8, 29					
Lacombe, N.W.T., immigration building		32					
Lake Beaulieu, P.Q.		20		116			
Lake Dauphin, Man.		23		167			
Lake Francis "		23		232			
Lake Manitoba "		23		166			
Lake Megantic, P.Q.		19		116			
Lake Nomininguc, P.Q.		19		120			
Lakeport, Ont.				150			
Lake Simcoe and Couchiching, Ont.		22					
Lake St. John, P.Q.		19					
Lake St. Peter, P.Q.	12			259			
Lamberts Pier, P.E.I.		16					
Lamerton, N.W.T., immigration building		32					
Lancaster, Ont.		22		150			

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
L							
Lands leased, &c							15
Lanoraie, P.Q		19					
Laprairie, P.Q		19		116			
" public building		8, 29					
L'Ardoise, N.S		14		32			
Larry's River, N.S		14		33			
L'Assomption, P.Q		19		212			
" " public building		8, 29					
Laurier bridge, Ottawa		25		249			
Lawlor's Island, N.S., quarantine station		7	3				
Leamington, Ont		22		150			
Leased properties							12
Leduc, N.W.T., building		32					
Les Cuisses d'Alma, P.Q				116			
Les Eboulements, P.Q		19					
Le Tableau, P.Q		19		117			
Lethbridge, N.W.T., public building		12, 32					
" " bridge		25					
Letters, departmental, sent and received							43
Levis, P.Q., graving dock		19		238		6, 14	
" public building		8, 29	8				
Lewis Point, P.E.I		16		72			
Lewis-Yukon rivers		24					
Lighting, public buildings		28					
Lindsay, Ont., public buildings		10, 30					
Lingan, N.S		14		33			
Lismore, N.S		18		8			
L'Ile d'Alma, P.Q		19					
L'Islet, P.Q		19		117			
Little Bear Creek, Ont		22		151			
Little Fox River, P.Q		20					
Little Forks, N.B		17					
Little Harbour, N.S		14		34			
Little Salmon River, N.B		17		88			
Little Tobique, N.B		17					
Little Valley, P.Q		20					
Liverpool, N.S., harbour		15		178			
" " public building		7, 28					
Livingston Cove, N.S		15		34			
Lloydminster, N.W.T		12					
Lockport, N.S		15		34			
Loggieville, N.B		17		79			
Longueuil, P.Q., public building		8					
London, Ont., public buildings		10, 30					
Lord's Cove, N.B		17		88			
L'Orignal, Ont		22		151			
Lotbinière, P.Q		19		118			
Lower Montague, P.E.I		16					
Lower St. Lawrence piers		19					
Lower Washabuck, N.S		15		35			
Lower West Pubnico, N.S		15		35			
Lunenburg, N.S., public building		7, 28					
M							
McCracken's Landing, Ont		22		151			
McGowans, N.B		18					
McGregor's Creek, Ont		22		152			
McKay's Point, N.S		15		38			
McNair's Cove, N.S		15		39			
McNutt's Island, N.S		15		39			
Mabou, N.S		15		178	27		
Macleod, N.W.T., public building		12, 32					
Madawaska River, slide		24		242			
" N.B		17					
Magdalen Islands, P.Q		20			9, 25		
Magog, P.Q		20		118			
Maguasha, P.Q		20		118			

Names of Places, &c,	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
M							
Main-à-Dieu, N.S.		15		35			
Main River, N.B.		17					
Malagawatch, N.S.		15		36			
Malignant Cove, N.S.		15		36			
Manitoba, dredging		23		232			
" harbours and rivers	9	23		166			
" public buildings		11, 31					
Maple Creek, N.W.T., court house		32					
Marconi—wireless telegraphy					20		
Margaree Harbour, N.S.		15		37			
Margaretville, N.S.		15		38			
Maria, P.Q.		20		118			
Maria Street bridge, Ottawa		25		249			
Maritime Provinces, dredging		14					
" public buildings		7, 28					
" telegraphs		25			6		
Marysville, N.B., public building		8, 28	5				
Matane, P.Q.		20		118			
Meaford, Ont.		22		152			
Medicine Hat, N.W.T., public building		12, 32					
Melburne, N.S.		15		40			
Meteghan Cove, N.S.		15		40			
Meteghan River, N.S.		15		41			
Middleton, N.S., armoury		7					
Middle River, N.S.		15		43			
Midland, Ont.		22		152			
Miminigash, P.E.I		16		73			
Minnidosa, Man., lands office		32					
Minudie, N.S.		15					
Miramichi, N.B.		17					
Miscou, N.B.		17		88			
Mispec, N.B.		17		89			
Mistook, P.Q.		20		119			
Moisie Post Road, P.Q.		25					
Moncton, N.B., public building		8, 28					
Monetville, Ont.		22		153			
Montague, P.E.I., public building		7, 28					
Montebello, P.Q.		20		212			
Mont Louis, P.Q.		20		119			
Montmagny, P.Q., public building		8, 29					
" wharf		20		119			
Montreal, P.Q., public buildings		8, 29	9				
" harbour	9	20		120			
Morrel, P.E.I		16					
Moose Jaw, N.W.T., public buildings		12, 32					
Moosomin, N.W.T. "		12, 32					
Morpeth, Ont.		22		153			
Mount Julien, Ont.		23		153			
Musquodoboit, N.S		15		43			
N							
Nadeau, A., gratuity		26					
Names of Chief Officers							27
Nanaimo, B.C., public building		12, 33	22				
Nanaimo—Comox, telegraph		26			17, 38		
Napanee, Ont., public building		10, 30					
Nappan, N.S., experimental farm		7					
National Art Gallery, Ottawa		10, 30					23
Necum Tench, N.S.		15		43			
Negro Point, N.B.		18		90			
Neguac, N.B.		17		180			
Neil's Harbour, N.S.		15					
Nelson, B.C., public building		12, 33					
New Brunswick, dredging		17					
" harbour		17		77			
" public buildings		7, 28	4				
" telegraphs		25					

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
N							
New Carlisle, P.Q		20		120			
Newcastle, N.B.		17					
" public building		8, 28					
Newcastle District, slides		24		246		6, 12	
Newcastle, Ont		23		153, 217			
Newfoundland, telegraph		25			6, 23		
New Glasgow, N.S., public building		7, 28					
New Harbour, N.S		15		44			
Newelton, N.S		15		44			
New Liskeard, Ont		23		217			
New London, P.E.I		12		73			
Newmarket, Ont., post office		30					
Newport, P.Q		20					
New Richmond, P.Q		20					
New Westminster, B.C., public bldgs		12, 33	22				
Niagara Falls, Ont, public building		10, 30					
Nicolet, P.Q		20		212			
North Bay, Ont		23					
North Cardigan, P.E.I		16		74			
North Gut, St. Ann's, N.S		15					
North Head, N.B		17					
" post office		8					
North River, N.S		15		45			
North Shore, St. Lawrence, telegraphs		25			10, 32		
North Sydney, N.S., public building		7, 28					
North Thomson, river, B.C		24					
North-west Territories, bridges		25		250			
" public buildings		12, 32	21				
" telegraphs		26			15, 36		
Notre-Dame du Lac, P.Q		21		121			
Notre-Dame du Portage, P.Q		20					
Nova Scotia, dredging		14					
" harbour		14		6			
" public buildings		7, 28	3				
" telegraphs		25			26		
O							
Oak Point, N.S		14		32			
Oakville, Ont		23		154			
Officers of the Department							27
Officers employed on graving dock							33
" " slides and booms							29
Ogden's Pond, N.S		15		46			
Old Mans River bridge		25					
Ontario, bridges		25		250			
" dredging		22					
" harbours		22		141			
" public buildings		9, 29	12				
" telegraphs		25			14, 35		
Orangeville, Ont., public building		30					
Orillia, Ont., public building		10, 30					
" harbour		23		154			
Oromocto, N.B		18		180			
Oshawa, Ont., public building		10					
" harbour		23					
Otonabee River, Ont		23		246			
Ottawa, Art gallery		10, 30					23
" buildings and grounds		10, 30	13				
" government house		10, 30	14				
" experimental farm		10, 30	13				
" Major's Hill Park		10, 30	16				
" observatory		10, 30	17				
" post office		10, 30	16				
" printing bureau		10, 30	17				
" river		23		217			
" slides and booms		24		240		3, 11	
" roads and bridges		25		249			

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
O							
Ottawa streets, repairs		25	18				
Owen Sound, Ont., public building		10					
" harbour		14		154			
P							
Pacific cable tariff					44		
Paris, Ont., public building		10, 31					
Parkers Cove, N.S		15		46			
Parkers, N.B		18					
Parliament buildings, Ottawa		10, 30	13				
Parrsboro, N.S		15		47			
Parry Sound, Ont		23					
Partridge Island, N.B., quarantine		8		5			
" wharf		17		92			
" N.S		15					
Paspebiac, P.Q		20		121			
Pelee Island, Ont., wharf		23		155			
" telegraph		25			14, 35		
Pembroke, Ont		23					
" public building		10, 31					
Pembroke, N.S		15		47			
Penetanguishene, Ont		23		155			
Percé, P.Q		20		121			
Peribonca, P.Q., public building		9, 29					
Perth, Ont., revenue building		11					
Peterborough, Ont., public building		11, 31					
Petit Bonaventure, P.I				122			
Petewawa River, slides		24		242			
Petit de Grat, N.S		15		47			
Petite Anse Chlorydormes, P.Q		20					
Petites Bergeronnes, P.Q		20		107, 122			
Petite Rivière, P.Q		20		122			
Petit Cap, P.Q		20					
Petit Rocher, N.B		17		93			
Petites Tourelles, P.Q		20		122			
Petrolea, Ont., public building		11, 31					
Philippsburg, P.Q		20					
Photographer, departmental		27					
Pickering, Ont		23		156			
Picketts Pier, N.S		15		48			
Picton, Ont., public building		11, 31					
Pictou Island, N.S		15					
Pictou, N.S		15		48, 177			
" public buildings		7, 28					
Pierreville, P.Q		20		122, 213			
Pinkneys Point, N.S		15		49			
Pleasant Bay, N.S		15					
Pointe à Elie, P.Q		20		123			
Pointe aux Esquimaux, P.Q		20		123			
Pointe aux Trembles, P.Q		20		123			
Pointe au Baril, Ont				156			
Pointe du Chêne, N.B		17		93, 180			
Pointe Claire, P.Q		20					
Point Edward, Ont		23		156			
Point Edward, N.S., quarantine		7					
Point Fortune, P.Q		20		123			
Point Prim, N.S		16					
Pointe St. Pierre, P.Q		20					
Poitierville, N.S		15					
Portage du Fort, bridge		25		250			
Portage la Prairie, Man., public building		11, 32					
Porter's Lake, N.S		15		50			
Port Arthur, Ont., harbour		23		157, 217			
" public building		11, 31					
Port au Pique, N.S		15		49			
Port Bevis, N.S		15		10			
Port Burwell, Ont		23		157, 218			

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
P							
Port Colborne, Ont	9	23		158			
" public building		11, 31					
Port Daniel, P.Q.		20		124			
Port Darlington, Ont		22		143			
Port Elgin, Ont.		23		160			
Port George, N.S.		15		50			
Port Greville, N.S.		15		51			
Port Hawkesbury, N.S.		15		52			
Port Hood, N.S.		15		52, 178			
Port Hope, Ont.		23		160, 218			
" public building		11, 31					
Port Howe, N.S.		15		53			
Port Latour, N.S.		15		53			
Port Maitland, N.S.		15		54			
Port Morien, N.S.		14		15			
Portland, N.B., public building		8					
Port Phillip, N.S.		15		53			
Port Stanley, Ont.		23					
Poulamond, N.S.		15		55			
Prescott, Ont., public building		11, 31					
" dredging		23					
Prince Albert, N.W.T., public building		12, 32					
Prince Edward Island, dredging		16					
" harbours		16					
" public buildings		7	28				
" telegraph		25					
Printing Bureau, Ottawa		10, 30					
Printing and stationery		13					
Properties purchased and sold							12
Prospect, N.S.		15		56			
Public buildings, British Columbia		12, 33	22				
" Manitoba		11, 31	20				
" New Brunswick		7, 28	4				
" North-West Territories		12, 22	21				
" Nova Scotia		7, 28	3				
" Ontario		9, 30	12				
" Prince Edward Island		7, 28	7				
" Quebec		8, 29	8				
" Yukon Territory		13					
" generally	14	13, 33	25				
Public Works Agency, B.C.		27					
Q							
Quaco, N.B.		17		94			
Qu'Appelle, N.W.T., court house		32					
Quatsino, B.C.		24		172			
Quebec—dredging		18					
" bridges		25		250			
" harbours, &c.		18		104			
" public buildings		8, 29	8				
" telegraphs		25			21		
Quebec city—public buildings		8, 29	9				
" wharf		20		124			
R							
Ragged Head, N.S.		15		56			
Rat Portage, Ont., public building		11, 31					
Red Deer, N.W.T., pub. buildings		12, 32	21				
Red Head, N.S.		15		57			
Red River, Man.		23					
Red Store Wharf, N.B.		17					
Regina, N.W.T., public buildings		12, 32	21				
Rents, received						7	
" paid		28					
Repentigny, P.Q.		20					
Revelstoke, B.C., drill hall		12					

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
R							
Revenue	6					1	
Richibucto, N.B., public building		8, 28	5			7	
" wharf		17		94			
" river		17		181			
Richmond, P.Q.		21		125			
Richmond, P.Q., public building		9, 29					
Richmond Bay, P.E.I.		16					
Rideau, Hall, Ottawa		10, 30					
Rigaud, P.Q.		20		213			
Rimouski, P.Q., public building		9, 29					
" wharf		23		126			
River Kaministiquia, Ont.		23					
" Thames, Ont.		23					
" St. Francis, P.Q.		21					
" St. John, N.B.		17		96			
" St. Lawrence		20, 23		259			
" St. Louis, P.Q.		21		214			
" St. Maurice, dredging		21		247		5, 11	
" St. Maurice, slides, &c		24					
Rivière aux Renard, P.Q.		20					
" " Puces, Ont.		23		160			
" Batiscan P.Q.		20		211			
" Blanche, P.Q.		20					
" Chateauguay, P.Q.		21		211			
" du Lièvre, P.Q.		21		126, 238		6	
" du Loup, P.Q.		21		126			
" Jésus, P.Q.		21		213			
" Ottawa		20, 23					
" Ouelle, P.Q.		21		127			
" Richelieu		21		127			
" Verte		21					
" Saguenay, P.Q.		21					
" St. Anne, P.Q.		20					
Rocher Noir, P.Q.		20					
Roads and bridges		25		249			
Roberval, P.Q., immigration building		9, 29					
" wharf		19, 21		128, 213			
Robbins Landing, Ont.		23		161			
Rosedale, Ont., wharf		23		161			
Rossland, B.C., public buildings		12, 23	22				
Rosthern, N.W.T., public buildings		12, 32					
Rondeau, Ont.		23		161, 218			
Rustico, P.E.I.		16					
Russell, James, gratuity		26					
Ryan, Thomas, "		26					
S							
St. Alexis, P.Q.		21		129			
St. Alphonse, de Bagotville, P.Q.		21		130			
St. André de Kamouraska, P.Q.		21		131			
St. Andrews, P.Q.		21		213			
St. Andrews Rapids, Man	9	23		167			
Ste. Anne de la Pérade, P.Q.		21		136			
Ste. Anne de la Pocatière, P.Q.		21		136			
Ste. Anne des Monts, P.Q.		21		137			
Ste. Anne de Sorel, P.Q.		21		136			
Ste. Anne du Saguenay, P.Q.		21		137			
St. Antoine, P.Q.				214			
St. Blaise, P.Q., dredging				214			
St. Catharines, Ont., public building		11, 31	19				
St. Denis, P.Q.		21					
St. Eustache, P.Q., post office		29					
Ste. Emélie, P.Q.				138			
Ste. Famille, P.Q.		21		138			
St. Félicien, P.Q.		21		131			
St. Fidèle, P.Q.		21		131			
St. Francis River, N.B.		17					

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
S							
St. Francis River, P.Q.		21		125			
St. François, P.Q.		21		132			
St. Fulgence, P.Q.		21		132			
St. Gédéon, P.Q.		21		132			
Ste. Geneviève, P.Q.		21		138			
St. Godfroid, P.Q.		21					
St. Henri, P.Q., public building		9, 29					
St. Hyacinthe, P.Q., public building		9, 29	10				
St. Irénée, P.Q.		21		132			
St. Jean, Ile d'Orléans		21		133			
St. Jean de Chaillons, P.Q.		21		214			
St. Jean Chrysostôme, P.Q.		19		132			
St. Jean Port-Joli, P.Q.		21		133			
St. Jérôme, P.Q., public building		9, 29					
" wharf		21		133			
St. John River, N.B.		17		95			
St. John harbour, N.B.,		18		180,181			
" N.B., public buildings		8, 28	6				
St. Johns, P.Q. "		9, 29					
" " wharf		21		214			
St. Joseph, Ont.		23		162			
St. Laurent, Ile d'Orléans		21					
St. Louis du Mile End, P.Q.		9					
St. Marc, P.Q.		21		134			
St. Mathias, P.Q.		21		134			
St. Maurice River, dredging		21		214			
" slides, &c		24		247		5, 11	
St. Méthode, P.P.		19		140			
St. Michel de Bellechasse, P.Q.		21		134			
St. Nicholas, P.Q.		21		135			
St. Nicholas River, N.B.		18					
St. Peters, N.S., telegraph		25			6		
St. Peters Bay, P.E.I.		16		74			
St. Roch, P.Q., public building		29					
St. Roch des Aulnaies, P.Q.		21					
St. Siméon, P.Q.		21		135			
St. Stephen, N.B., public building		8, 28					
St. Thomas, Ont., public building		11, 31					
St. Valentin, P.Q.		21		135			
St. Zotique, P.Q.		21		136			
Sabrevois, P.Q.		21		128			
Sacré-Cœur, P.Q.		21		113			
Saguenay River, telegraph		25					
Salmon River, N.B.		17					
Salmon River, B.C.		24					
Saltcoats, N.W.T., immigration shed		12					
Sandy Cove, N.S.		15		57			
Sarnia, Ont., public building		11, 31					
" dredging		23		162			
Saskatoon, N.W.T., immigration building		12, 23					
Sault Ste. Marie, Ont., wharf	8	23		162			
" public building		11					
Scotts Bay, N.S.		15		57			
Secretary's staff, salaries		26					
Selkirk, Man., immigration building		11, 32					
Selkirk, Man., wharf		23		167			
Seven Islands, P.Q.		21		110			
Sewell, N.B.		18					
Shag Harbour, N.S.		15		58			
Sherbrooke, P.Q., public buildings		9, 29					
Shegawake, P.Q.		21		138			
Ship Channel, St. Lawrence	13	20		259			
Shippegan, N.B.		18		100			
Ship yard, Sorel, P.Q.	12			271			
Short Beach, N.S.		15					
Sidney, B.C.		24		173			
Sight Point, N.S.		15					
Skeena River, B.C.		24		173			

Names of Places, &c.	Part 1. Page.	Part 2. Page	Part 3. Page	Part 4. Page	Part 5. Page	Part 6. Page	Part 7. Page
S							
Slides and booms		24		240			
" dues						8	
" officials							29
Smith's Falls, Ont., public building		11, 31					
Sorel, P.Q., public buildings		9, 29					
" harbour		21		139			
" ship yard	12			271			
Souris, P.E.I		16		75			
South Gut, N.S		15		58			
South Ingonish, N.S		15		59			
Spallumachine, B.C		24		174			
Springhill, N.S., public building		7, 28					
Springhill, N.B		18		181			
Spry Bay, N.S		15		59			
Stonehaven, N.B		17		84			
Stratford, Ont., public building		11, 31					
Strathcona, N.W.T., immigration building		12, 33					
Strathroy, Ont., public building		11, 31					
Sturgeon Falls, Ont		23		162			
Sturgeon Pier, P.E.I		16		75			
Summerside, P.E.I., harbour		16					
" public building		7, 28					
Superintendent of telegraphs	15				1		
Surveys and inspections		24		4			
Sussex, N.B., public buildings		8, 28	5				
Swims Point, N.S		16		60			
Sydenham River, Ont		23		163			
Sydney, N.S., public building		7, 28	3				
" dredging		16					
" quarantine wharf		16		60			
Sydney Mines, N.S., public building		7					
T							
Tableau, P.Q		19					
Tadousac, P.Q		21		139			
Tancook, N.S				60			
Tariff, telegraph lines					43		
Technical, books of reference		26					
Telephones					21		
Telegraph lines, generally	15	16			4		
" report					1		
" revenue					20		
" service, staff, &c		26			23, 29		
Temiscouata Lake, P.Q		21		121			
Temporary employees		26					
Tenecape, N.S		16		61			
Terrebonne, P.Q., public building		9					
Teulon, N.W.T., immigration building		33					
Thames River, Ont		23					
Thessalon, Ont		23		163			
Thetford Mines, P.Q., public building		9	11				
Thomson, N.B		18					
Thompson River, B.C		24		174			
Thornbury, Ont		23		163			
Three Rivers, P.Q., harbour		21					
" public building		9, 29					
Ticonabé, P.Q		19		140			
Tidnish, N.S		16					
Tignish, P.E.I		16		76			
Tiverton, N.S		16		61			
Tobique River, N.B		17		98			
" Rocks, N.B		17		98			
Tolmaville, Ont				164			
Topley's, N.B		18					
Toronto Junction, Ont., public buildings		11	20				
Toronto, Ont., harbour		23		164			
" public buildings		11, 31	19				

Names of Places, &c.	Part 1 Page.	Part 2 Page.	Part 3 Page.	Part 4 Page.	Part 5 Page.	Part 6 Page.	Part 7 Page.
T							
Total expenditure of department		27					
Tracadie, N.B., lazaretto		8, 28					
Tracadie, N.S.		16		61			
Tracadie, N.B., wharf		18		101			
Transportation Commission	10	26					
Trent and Newcastle, slides		24		246		6, 12	
Trenton, Ont., harbour		23		218			
" public building		11, 31					
Trois Lacs, P.Q.		22		140			
" Pistoles, P.Q.		22		141			
Truro, N.S., public buildings		7, 28					
Tynemouth Creek, N.B.		18		102			
Tyrian, ss. cable ship	16	25			20		
U							
Uncollected slide and boom dues						8	
Upper Gagetown, N.B.		18					
" Port Latour, N.S		16		62			
" Salmon River, N.B		18		103			
V							
Valleyfield, P.Q., dredging		22		215			
" public building		12, 33	23				
Vancouver, B.C. "		8, 27	26				
Vancouver Salt Springs, telegraph		26			40		
Verchères, P.Q.		22		141			
Vernon River, P.E.I.		16		76, 179			
Victoria, B.C., harbour		24		174			
" public buildings		13, 33	23				
Victoria, Cape Beale, telegraph		26			17, 40		
" Andrew, N.W.T., telegraph		26					
Victoria, P.E.I.		16		76			
Victoria Beach, N.S.		16					
Victoria, Ont		23		165			
Victoria National Museum	10						
Victoriaville, P.Q., public building		9, 29					
Ville Marie, P.Q.		22		215			
W							
Walkerton, Ont., public building		9, 31					
Washabuck, N.S.		16		63			
Washago, Ont		165					
Water, public buildings		28					
Wedge Point, N.S.		16		63			
Wendover, Ont.		23		165			
West Baccaro, N.S.		16		63			
West Bay, N.S.		16		64			
" Chezzetcook, N.S.		16					
West Farnham, P.Q., public building		9, 29					
Western Head, N.S.		16		64			
West Point, P.E.I.		16		77			
" Pubnico, N.S.				65			
West Wood Harbour, N.S				65			
Wetaskiwin, N.W.T., public building		33					
Whitehaven, N.S.		16		66			
Whites Cove, N.S.		16		66			
White Mud River, Man		23		232			
Wiarton, Ont.		23		166			
Wickham, N.B.		18					
Williams Head, B.C., quarantine		13, 33	24				
" wharf		24		175			
Wilmer Channel, B.C.				169			
Wilson's Beach, N.B.		17		103			
Wilson, Jas., gratuity		26					
Windsor, N.S., public building		7, 28					

Names of Places, &c.	Part 1. Page.	Part 2. Page.	Part 3. Page.	Part 4. Page.	Part 5. Page.	Part 6. Page.	Part 7. Page.
W							
Windsor, Ont., public building		11, 31					
" N.S., wharf		12		67			
Wingham, Ont., post office		11	20				
Winnipeg, Man., public buildings		11, 32	20				
Wood Mountain, N.W.T., telegraph		26					
Wolfeville, N.S		16		67			
Wolseley, N.W.T., court house		12, 33					
Wood Island, P.E.I		16					
Woodstock, N.B., public building		8, 28					
Woodstock, Ont. "		11, 31					
Y							
Yamaska River, P.Q		22		215			
" lock and dam		22		230		6	
Yarmouth, N.S., dredging		16		68, 178			
" public building		7, 28					
York Bridge, Ont.		25					
Yorkton, N.W.T., public buildings		12, 33					
Yukon River		24					
Yukon, public buildings		13					
" telegraphs	26				41, 49		

PART I

REPORT

OF THE

DEPUTY MINISTER OF PUBLIC WORKS

FOR THE YEAR ENDED JUNE 30

1904

REPORT

OF THE

DEPUTY MINISTER OF PUBLIC WORKS

FOR THE FISCAL YEAR, 1903-04.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, January 30, 1905.

The Honourable CHARLES S. HYMAN,
Acting Minister of Public Works of Canada

SIR,—I have the honour to submit to you the report of the Department of Public Works of Canada for the fiscal year ended June 30, 1904.

This report, the general plan of which does not differ materially from that submitted to parliament for the last fiscal year, refers to the works carried on during the 12 months ended June 30, 1904, in the improvement of harbours, rivers, slides and booms, roads and bridges; the construction, maintenance and repairs of the several public buildings, as well as the continuation, completion and maintenance of the telegraph system of the department throughout the Dominion of Canada. It contains also statements of the revenue accrued and collected by this department during the same period, as well as of the expenditure made during the fiscal year.

The information contained in the annexed appendices shows in detail the operations carried on under the guidance of the chief officers of your department. The work performed under their direction, following the increase of the general business of the country and being in direct proportion to the larger amount of money granted for the improvement of the avenues destined to accommodate our ever growing trade and commerce, has required from them, during the year under review, an attention to their work and an exercise of their high qualifications which can at once be discerned by the perusal of their individual reports. It is true that in one of the branches of the service, that of the Chief Engineer, a certain proportion of the work allotted to him has been diverted by legislation to another department, but while the sum of money disbursed for the management of the work in question reached the fairly large average of $500,000 per year (I am now speaking of the ship channel between Montreal and Quebec) still the increase in the general expenditure for the balance of the harbour and river works have more than trebled the sum that used to be spent, under the control of that officer, in connection with this particular work. The gross total of the work under the charge of the Chief Engineer has not, therefore, for this reason, been in any

way materially reduced but has otherwise so very largely increased that it has required from the officer in charge, Mr. Lafleur, increased exertion and has entailed upon him a much greater amount of responsibility.

Such an extension in the scope of the officers' duties has been manifest in all of the branches of your department. The class of buildings, of which the construction has been started during the past year, is of much greater importance and has entailed much more arduous preparation than for years past, while the ever increasing number of new buildings consequent upon the yearly addition to an already numerous list has required from the Chief Architect a greater than usual amount of labour, not only in the line of new buildings but in superintending the maintenance of those already constructed.

In the telegraph system the same enlargement has taken place. The mileage of our telegraph lines is now over 6,000 miles. In cables alone we have to superintend the maintenance of 402 miles.

I am glad to be able again this year to state that the maintenance of our telegraph lines, especially the systems in the Yukon and on the north shore of the St. Lawrence have been attended with very satisfactory results, the whole reflecting great credit upon the General Superintendent.

EXPENDITURE.

The total expenditure during the fiscal year under review, in the various branches of the department, has amounted to the total sum of $7,392,289.62, that sum comprising an amount of $900,000 advanced during that year to the Harbour Commissioners of Montreal for the performance of such works of construction as were authorized by legislation and paid for out of the sums allotted for that purpose by the several Acts of parliament having reference to the establishment of said harbour.

The detail of the general expenditure may be described and divided as follows, viz.:—

Harbour and river works	$3,389,936 02
Dredging and plant	374,181 94
Slides and booms	127,549 37
Bridges and roads	103,759 29
Public buildings	1,890,281 77
Telegraphs	385,693 51
Miscellaneous	220,887 72
	$6,492,289 62

To the above sum should be added that of $900,000 advanced to the Montreal Harbour Commissioners, which makes the total amount expended under the supervision of this dpartment, $7,392,289.62.

During the fiscal year under review the Harbour Commissioners of Montreal completed the erection in their harbour of a large grain elevator of the best and most

modern construction, and I am proud to say that the work in all its details was supervised and carried to a successful issue under one of the departmental engineers, Mr. Arthur St. Laurent, to whose professional ability no better certificate can be given than the satisfactory completion and acceptance of such a difficult piece of work.

I may here call attention to the fact that the above report of the expenditure of the department does not actually give an absolutely exact and correct idea of the work performed by its officers. While it is true that the direct expenditure has only amounted to the sum of $6,492,289.62, it must be borne in mind that the vote placed at the disposal of the department for the same fiscal year has amounted to the sum of $8,681,227.20; the difference between the sum expended and that voted being explained by the fact that either certain works for which amounts were provided by parliament could not be commenced during the year, or that some of the works commenced were not carried on as quickly as expected. Plans, however, had to be prepared for each of those works ; surveys and estimates were made and in a good many cases tenders were called for and contracts awarded. In fact, all the initial work in connection with the unexpected amounts was actually performed and must be taken into consideration when the work of the department during the year is being passed under review.

In the Chief Engineer's branch alone, 238 surveys were made during the year.

A perusal of the short introduction given by the Accountant of the department to his annual statement will show that material increase has taken place in the work of that branch, if only the issue of cheques, in payment for the department's operations, is considered: the number of cheques issued during the past year has averaged about 4,000 per month, a large part of the payments now being made by cheques to the direct order of the parties entitled to receive the department's money. This large amount of work ought to satisfy the public who may read these lines, that if at times some delay occurs in the issue of a payment for their particular account, they are not the only ones whose accounts are being considered and paid, and that in the work devolving on the Accountant's office a certain delay is altogether unavoidable. It is reasonable to expect that the examination, checking, tabulation, &c., of all the accounts, the issue of cheques to cover them and the mailing of same must take in itself a certain time which cannot always be estimated in minutes or fractions of a minute, and that the impatience at what appears to be delay may not always justify a complaint of dilatoriness and negligence on the part of those entrusted with the work.

The requirements of the Auditor General, as regards the physical appearance of the accounts submitted as vouchers, while generally of a very reasonable nature, refer however to such minute details that the local officers in charge of the several works, whose duty it is to certify those vouchers do not always observe all the rules laid down for such certificates. In such cases the accounts have to be returned to the inspecting officers and by the latter to the local inspectors, and when the works are at some distance, and sometimes out of reach of easy communication, the delay, while perhaps unexplainable to the interested party, is, however, one that cannot be avoided.

4-5 EDV

Considering the large amount of work that has to be performe reason to congratulate the officer in charge of this branch for the e in which his work has been carried on. Of course, in the perfo work year after year, means suggest themselves which are brougl pedite the work to be performed and in that manner, although fully satisfy the public, a consummation devoutly hoped for bu attainment, we hope that the percentage of complaints in refe the issue of payments is being brought down to a minimum as

REVENUE.

The revenue collected by the department this year has amo amount some $2,000 lower than that collected during the p There has been a decrease of some $7,000 in the revenue of sli little over $5,000 in the case of graving docks and locks. Ther in the telegraph revenue for the past year of some $15,000.

The revenue branch is carefully looked after by the C who spares neither time nor trouble to bring to the departm it is entitled out of the several revenue producing branches. on slides and booms especially entails an incessant labour a examination of the operations of the several lumbermen in Ottawa districts. The labour of this branch of the servi next year by the necessary establishment in the River purpose of accommodating the manufacture of logs of all are being produced for the large pulp industry which has New booms are to be placed at the latter point during th and it is expected that a fair revenue will be deriv expected that the ever increasing operations on the R a greater buoyancy in the revenue from that quarter operations on all the revenue producing rivers, it is returns which will be given in the coming report of thi able advance upon those of the present year.

In last year's report I referred to the remarka during the past twenty years, when in 1889 the c $14,000.

I beg to subjoin a detailed statement of the rev same being as follows :—

Slides and booms. . . . . .
Graving docks. . . . . .
Locks. . . . . .
Rents. . . . . .
Telegraphs. . . . . .
Casual revenue. . . . . .

It is to be deplored that he did not live long enough to see the success of his discovery and to have the opportunity of making such improvements as the use of his invention would surely have suggested to his knowledge and activity.

The principal works in connection with harbours, which have been under the control of the department, during the year under review, have been: in the province of Nova Scotia, those of Cow Bay and Victoria Beach; in the province of Prince Edward Island, those at Summerside; in New Brunswick, Cape Tormentine, Caraquet and Richibucto works; in the province of Quebec, those at Father Point, Quebec, Montreal, Sorel and Three Rivers; in the province of Ontario, those at Collingwood, Depot Harbour, Midland, Burlington channel, Owen Sound, Port Burwell, Port Colborne, Toronto, Kaministiquia River, Fort William and Port Arthur; in British Columbia, those on the Fraser River and Victoria Harbour.

Several new harbour works were constructed in the various provinces, the detail of which will be found in the chief engineer's report.

The works at Montreal (Maisonneuve) are nearing completion and it is expected that they will be finished by the end of the present season. A full description of the same was given in former reports and the work done during the past fiscal year has been a continuation of what was described. The works at Quebec were commenced under a contract passed on May 8, 1903; they consist of timber cribwork as a foundation for a concrete superstructure which will stand six feet above high water spring tides. When the work is fully completed it will be 984 feet long and will afford much needed accommodation for ocean shipping. The works at Three Rivers are also of a permanent kind, consisting of a concrete superstructure built on a timber and stone foundation. This work has not been going on as rapidly as expected, but it is to be hoped that good progress will be made during the coming year. The harbour of Three Rivers is increasing its trade in a very rapid manner and from information obtained, the harbour can accommodate, if the necessary wharfing were supplied, many thousand tons of traffic in addition to that which is now served.

In the province of Ontario the works at Port Colborne are being pushed with energy with a view to protecting the harbour area which is being formed at the entrance of the Welland canal. The structures which are being constructed there have been built with a view to permanency, concrete being largely utilized in their erection.

A perusal of the report of the chief engineer will show the progress of the works at the various other important points on the lakes.

At St. Andrews rapids, in the province of Manitoba, new conditions have occurred which have rendered necessary the suspension of the contract which had been entered into for the construction of a lock and dam, among them a proposal by the Canadian Pacific Railway to utilize the works to be constructed there for the purpose of combining therewith a railway bridge. New plans will be prepared with a view of amending the work in order to make it agree with the new conditions arising at that place.

The works in the province of British Columbia, under the control of Engineer Keefer, have been continued with activity during the year. At various points on the

In the upper St. Lawrence and on the lake region, the construction of concrete works has offered to the department the best degree of permanency which at the present time can be attained. The works now going on in the harbour of Quebec, those under contract at Three Rivers, the important improvements at Maisonneuve (Montreal), and the large works now going on at Port Colborne, are being built of concrete masonry.

With the gradual disappearance of timber of large dimensions and the consequent higher price to be paid for it, the cost of cement works is gradually becoming very near that which has to be paid for works constructed of sound durable timber of large size, and the permanency of such works, when the repair to harbour works is taken into consideration, will reduce the apparently higher initial cost.

It was with some degree of hesitation that the department, a few years ago, entered into that style of construction owing to the apparent increased price, but we have to congratulate ourselves at present for having ventured on that course and there is no doubt that all the future important works of the department will be constructed in this manner.

'Wooden structures must of necessity become obsolete; the cost of timber is each year greater, and renewals and repairs are too frequent. Concrete for all structures to be built, and for repairs, would be cheaper in every way, as well as stronger and more lasting, avoiding constant and expensive repairs. Now is the time to start and gain experience in the mode of construction. We have at nearly every harbour the stone, gravel and sand for the taking, and only the cost of cement and labour, with plant, is required to do the work.

'Recently in the Ontario district the department has built a wharf at Orillia with foundation of wooden cribs and superstructure of concrete, at a cost of no more than if built entirely of timber, decked over and filled with stone.

'At Sault St. Marie in the extension of the government wharf, the contract called for wooden superstructure, but the contractor offered to build it of concrete for the same amount of cost and his offer was accepted. There is no comparison between the two methods of construction.'*

Another improvement in the mode of construction of those works is being tried at present in the utilization of a system of beams of reinforced concrete manufactured to resemble timber structures and put together in about the same manner, this plan having been invented and patented by the late J. W. Fraser, a talented young engineer of the department, who, unfortunately, lost his life in a drowning accident which occurred at Rivière du Loup, below Quebec, during the past summer. Mr. Fraser had been connected with the department for a good many years, in fact, had entered it quite young and had grown with it. He was fond of research and study, and utilized his spare moments to inquire into the adaptability of cement and concrete in the construction of works under the charge of the department. Out of his study of that ques-
l the principle of the construction of concrete cribs, which was tried for
n the works at Depot Harbour and which, has proved an absolute success.

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om a report by H. A. Gray.

It is to be deplored that [illegible] and to have the opportunity [illegible] would surely have suggested [illegible]

The principal works [illegible] trol of the department [illegible] Nova Scotia, those [illegible] Island, those at [illegible] Richibucto works [illegible] Sorel and Three Rivers [illegible] bour, Midland [illegible] ronto, Kamiskotia [illegible] those on the Fraser River [illegible]

Several new [illegible] of which will [illegible]

The works at [illegible] that they will [illegible] same was given [illegible] been a continuation [illegible] under a contract [illegible] tion for a contract [illegible] tides. When the work [illegible] needed accommodation [illegible] permanent [illegible] foundation. [illegible] that good progress [illegible] is increasing in the [illegible] bour can accommodate [illegible] of traffic in another [illegible]

In the province [illegible] energy with a view [illegible] of the Welland [illegible] built with a view [illegible]

A perusal [illegible] at the various [illegible]

At St. Andrews [illegible] which have resulted [illegible] into for the construction [illegible] Pacific Railway [illegible] bining therewith [illegible] ing the work in the [illegible]

The works [illegible] Keefer, have been [illegible]

Columbia river, as well as on the Fraser river and in the harbours of Victoria and Vancouver, works of improvement which were commenced some two years ago will be carried on in the same satisfactory manner during the next fiscal year.

In brief, great activity has been shown by the department in providing throughout the country, from the Atlantic to the Pacific, those improvements to navigation which the increased commerce, the development of trade in the several parts of the country and the opening up of the west by the continually increasing stream of immigrants, have rendered absolutely necessary.

In this connection I may note here the important work performed by the Royal Commission on Transportation, which has already covered the ground in the eastern provinces and Ontario, and which will proceed to investigate the question of transportation in connection with Manitoba, the North-west Territories and British Columbia. I am sorry to record here the death of the chairman of that commission, Mr. John Bertram, which occurred on November 28 last. In Mr. John Bertram, the commission has lost a very valuable member who, as chairman, had been conducting its work with a great degree of usefulness which promised very valuable information being derived from its labours. His position as chairman has been filled by the appointment of one of his brother commissioners, Mr. Robert Reford, well known in commercial and shipping circles of Montreal, and as member of the commission he has been replaced by Mr. J. H. Ashdown, of Winnipeg.

Although having taken place after the close of the fiscal year under review, I may also note the formation of the Canadian section of the International Commission on Deep Water-ways, which is to act conjointly with the United States nominees to study and reported on questions of navigation in adjoining waters of the Dominion of Canada and the United States of America. The members of the commission chosen are Mr. J. H. Mabee, a legal gentleman from Stratford, Ontario ; Mr. Louis Coste, formerly Chief Engineer of this department, and Mr. W. F. King, Astronomer of the Department of the Interior. The members of this commission representing Canada will be called upon to perform valuable work and the nominees selected to represent the Canadian Government are a guarantee that the interests of Canada will be well looked after.

I may also refer to the initial steps which have been taken by the department in connection with the surveys now being proceeded with as a preparation for the compiling of plans and estimates for the construction of the Georgian Bay Canal. This work which is under the control of the Chief Engineer and more especially under the guidance of Mr. Arthur St. Laurent, as engineer in charge of the whole work, was commenced during the course of last summer and at the present moment ten surveying parties are distributed over the area extending from Georgian Bay to the harbour of Montreal. It is expected that the field work will be completed by the end of the present calendar year.

'The proposed navigation route extends from the mouth of the French river down to Montreal, a distance of about 425 miles.

'It follows the French river and Lake Nipissing, passes, at the height of land, through Trout, Turtle and Talon lakes, follows the Mattawan river to its junction

with the Ottawa, thence down the Ottawa as far as Montreal, leaving the bed of the river occasionally to evade difficult points.

'Sixty-two miles of this route having been carefully surveyed in 1901, there remained 368 miles to be covered by the new survey.

'It was decided, from the beginning, that the information gathered to study the feasibility of the route, to prepare plans and to make a close estimate of cost of the whole route, should be entirely original and that the old plans from old partial surveys should be used only as preliminary information and for general guidance.

'This will involve actual detailed surveys, on a larger scale perhaps than anticipated, and it will make the survey relatively expensive, but for a project of that magnitude and importance, it will prove much more satisfactory, in the end, to collect actual and complete data from the present field operations.

'The immediate object of the survey is, that when the notes are reduced and plotted, a location may be projected on the plans, for a ship canal of no less than 22 feet in depth, a profile drawn and a correct estimate made of the kind and amount of all material found necessary to be excavated, the kind, character of foundation and dimensions of all walls, locks, dams and other structures, also the estimating of all extra right of way required for the canal proper, where it leaves the bed of the rivers and for spoil banks and overflowed areas.' *

The despatching of so many engineering parties, at the same time as the surveying work for the Transcontinental Railway was being commenced, has given employment to a large number of Canadian engineers. It has been found, on the formation of parties, that the engineering profession in Canada was fully equal to the demand made upon it for the professional equipment which is required for the explorations and studies necessitated by the extensive surveys for those two great works. All the engineering staff has been supplied by Canadian intelligence and professional training, and there is no doubt that the profession in Canada is fully able to render a good account of itself in the performance of the arduous duties connected with the examinations now under way.

During the past fiscal year and under an appropriation granted by parliament two sessions ago, an exploratory and instrumental survey and examination of the Ottawa river was undertaken commencing at or near the foot of Lake Temiscamingue and thence to the source of the river including its principal tributaries and feeders.

Many valuable data have been obtained by the survey parties in spite of the unfavourable weather during the time they were in the field, from July to November. The work of plotting the data obtained and preparing the necessary plans is now being proceeded with and it is hoped that the results will be in the possession of the department within a short time.

The work has been throughout under the direction of Mr. G. P. Brophy, the Superintending Engineer of the Ottawa river works.

* Extract from a report by Mr. A. St. Laurent.

DREDGING.

As was stated in the introduction to my report of last year, a very important part of the work performed by this branch of the department under the control of the Chief Engineer has been that covered by the dredging operations throughout Canada.

The fleet at the disposal of the department has been somewhat reduced by the transfer to the Department of Marine of the vessels engaged in the improvement of the channel between Montreal and Quebec, the seven dredges engaged on that work being no longer under our control. This work, however, the magnitude of which must not be underestimated, only comprises a small proportion of the dredging operations under our charge, and there is still a large fleet attending to the improvement of the harbours and rivers of Canada.

The fleet engaged in the Maritime Provinces will be augmented during the course of the present year by the placing in commission of the new steel dredge the *W. S. Fielding*. This vessel, I think, is the largest of the kind which will be afloat on American waters and it is hoped that its output will be in due proportion to its size, its mode of construction and the expenditure connected with its building and final equipment. Another hydraulic dredge, of smaller proportions but still very powerful, is being now constructed for the Maritime Provinces in the workshops of the Polsons Iron Works in Toronto. She is being built upon the lines adopted for the *King Edward*, operating in British Columbia waters, but several improvements of great value have been added in her construction, and when completed she will be a powerful addition to our maritime fleet.

A new dredge will also be completed for work in Prince Edward Island waters. This one will be a dipper dredge but of modern design and construction.

Plans are now being prepared with a view of calling for tenders for an elevator dredge for the provinces of Ontario and Quebec, with the immediate object of proceeding with the work of improvement in the upper reaches of the River Saguenay at Chicoutimi, where a pressing demand is made for greater depth of water by the more than extraordinary development of the lumber industry, more especially in connection with the manufacture of pulp at the town of Chicoutimi. A large stone lifter will also be provided for.

The powerful dredge *International*, purchased by the department in 1903, has been at work during the past season in the harbour of Quebec.

The dredging fleet on the lakes, which was a year or so ago increased by the addition of a new dredge, *Sir Richard*, has been maintained to its full capacity during the past year, while improvements have also been made to the plant operating on Lakes Winnipeg and Manitoba.

The fleet in British Columbia, to which a valuable addition has been made by the construction two years ago of the hydraulic dredge *King Edward*, is being overhauled, the old snag boat *Samson* being replaced by a new one of an improved type. It is also the intention to provide another dredge to operate in British Columbia waters in the place of the old *Mud Lark*, which has nearly outlived its usefulness.

With the improvements under way and those still contemplated, the department will in a year or so be, I hope, in a position to be abreast of all the dredging work which will be necessary in the Dominion, and the work now being performed is a useful corollary to that which has been undertaken during the past eight years for the general improvement of the dredging plant rendered necessary by the urgent and numerous calls made in all the provinces.

The report of the Chief Engineer contains the usual details of the operations of the dredges throughout Canada, the output of each vessel, the average price per yard for their operation and the names of the various places where each dredge was at work. The statements attached to the Chief Engineer's report have been prepared with the usual care by the officers connected with that branch of the service and give a complete and comprehensive review of the work performed.

The dredging service is being looked after, under the general directions of the Chief Engineer, by the General Superintendent of dredging, Mr. James Howden, ably assisted by Mr. E. B. Godwin. This branch, the control of which comprises now the full service in the whole of the Dominion, will be looked after energetically by the officer in charge, who has had long and varied experience both under this department since 1889, and under the Harbour Commissioners of Montreal for many years before that period, when the fleet operating on the St. Lawrence was about the only one performing such work in Canada and when the dredging operations for the improvement of harbours and rivers were still in their infancy.

SHIP CHANNEL.

The report of the operations on the deepening of the ship channel between Montreal and Quebec is the last one which will find a place in the report of this department as the review of the operations for the fiscal year 1904-5 will be recorded in the report of the Department of Marine. It is only fitting that when bidding adieu to such an important part of the work supervised by us during the past fifteen years, I should render a deserved testimony to the ability and care with which it was performed while under our control. The plans which are now followed are those which were elaborated by the engineers in charge of that service during the above named period, and the success which has marked their performance is of itself the best evidence of the ability of those who were in charge of the work. The channel from Montreal to the head of Lake St. Peter is now, almost everywhere, of the standard depth of 30 feet and the width has been enlarged from 300 feet, at which it was originally placed, to 450 feet and widened in curves to 700 feet. The review of the operations on the channel this year is made by Mr. F. W. Cowie, who has been transferred to the Department of Marine to continue there the clever and useful work which he has performed for so many years in our own department. It is with some degree of sorrow that we have had to part with the useful officers employed here and at Sorel in connection with the ship channel, and it is only fair that this public testimony should be given of their value by one who has been associated with them and with this department for a period of over thirty years.

Mr. Cowie's report gives a full and comprehensive history of the work performed with the usual tables showing the work of each dredge, the points where each of them was stationed, and the average cost of the work of each vessel.

PUBLIC BUILDINGS.

As I have stated at the beginning of this report, the amount expended on public buildings during the year under review comes to a total sum of nearly $2,000,000, the expenditure being spread over nearly 300 buildings and having been made not only for new constructions, but for the maintenance of those already constructed, their repair, heating, lighting, &c.

Preparations for two new and important buildings were made during the year under review and tenders have been called for the same, they being the Victoria National Museum and the mint—both at Ottawa. Plans have also been prepared and tenders received for the construction of a new post office in the city of Winnipeg, and designs are also on the way for improved postal facilities in the cities of Montreal and Toronto, where the pneumatic system is going to be tried with all hopes of a successful result, and where additional postal stations are to be established in order to relieve the pressure upon the main post office buildings in those cities.

A large amount of work has also been performed in the Chief Architect's office in connection of the construction of armouries, drill sheds and the providing of new buildings in several of the towns of the Dominion.

During the year 1903-4, the following buildings were commenced or were in course of construction, viz.:

Nova Scotia—

Halifax custom house.
Sydney public building (addition).

New Brunswick—

Richibucto public building (completed).

Quebec—

Actonvale public building.
St. Hyacinthe inland revenue building.
Thetford Mines public building.
Valleyfield public building.

Ontario—

Alexandria public building.
Bowmanville public building.
Brantford drill hall.
Cobourg armoury.
Ottawa post office (reconstructed).
St. Catharines drill hall.
Toronto Junction post office.
Wingham public building.

ONAL PAPER No. 19

North-west Territories—

Red Deer court-house.
Regina immigration building.

British Columbia—

Nanaimo public building.
Rossland drill shed.

The cost of heating the public buildings in the Dominion has amounted during the under review to $88,031.41, and for lighting purposes to $75,017.52.

The buildings, as the report will show have been kept in good state of repair o far as the grants given by parliament would allow, the repairs being executed er the direction of the officers of the Chief Architect's staff whose efficiency is ly proved by the large amount of work which has been turned out by that branch ne department.

TELEGRAPHS.

The total number of miles of telegraphs under the control of the department is 4¼ miles, comprising 327 offices which have transmitted during the year under ew a total of 102,100 messages. The Yukon system has continued in good opera during the course of the past fiscal year and the receipts, although not coming to the expenditure for maintenance, have compared favourably with those he preceding year. Improvements will be made during the course of the next year, ch, I hope, will render the line easier of operation and will minimize the chances nterruption during the winter season. With the exception of a few days the com- nication with Dawson has been practically uninterrupted during the fiscal year.

In the lower St. Lawrence section, a commencement has been made of the con- ction of a line between Bersimis and Godbout, to take the place of the cables which laid down between those points in 1882 and which have practically outlived their ulness. The interruptions complained of during the previous years, will be a thing ne past when the new land line is completed.

It is worthy of note, that, although constructed in the wildest part of the eastern try, the line from Tadousac to Belle Isle has hardly been interrupted during the year, with the exception of an occasional rupture of the cables between the main and Anticosti island and the spasmodic operation of the cables between Bersi- and Godbout, to which I have just referred. The Marconi stations at Chateau Bay Belle Isle utilized as an alternate means of communication between the mainland Belle Isle, have been in satisfactory operation during the year, their work being ormed easily and communication having been kept up throughout without inter- on.

The Quarantine line between Grosse Isle and the city of Quebec has been kept in order with the exception of frequent interruptions in the cables connecting the d of Orleans with Grosse Isle. In this connection, and to obviate the recurrence inconvenience attending the lack of communications in the spring between the ntine station and Quebec, I would recommend Marconi stations, one at Grosse

Isle and one at some point on the Island of Orleans which can be established at reasonable cost and may be operated without any difficulty when the cable is o repair. Even the placing of another cable from Grosse Isle to the south shore not entirely remedy the interruptions complained of. Cables, especially during winter seasons when the ice is travelling in large quantities and with great ra on the River St. Lawrence, are apt to be easily interfered with and their repair c be attended to until after the opening of navigation in the spring. During the part of the season communication has therefore, per force, to be interrupted, fully believe that the establishment of Marconi stations would obviate this t which is of yearly recurrence.

The SS. *Tyrian*, which attends to our cable service in the gulf, the Bay of F and in the St. Lawrence, has been doing valuable work during the year under its commander, Capt. O'Leary, Pilot McConnell and its valuable officers. While sh not engaged in her own cable work, she has been of great and valuable service wise in attending to the repair of the cables of the Direct Cable Company, the performed by her in this connection having called forth the highest praise fro management of that cable company.

CEMENTS, &C.

Attached to appendix No. 4 will be found a very interesting memorandum Mr. George E. Perley, Engineer in charge of the cement testing laboratory.

This section of the Chief Engineer's work is becoming very important by reas the gradual advance of the department in the construction of permanent co works. The work in the cement laboratory is being done in a very satisfactory ner and its execution and supervision through Mr. Perley leaves nothing to be de

Contractors and other interested parties will appreciate the tables of tests, publ in this volume ; these are made, not only at the request of the officers of this, b other departments, and are eminently satisfactory.

CONTRACTS.

Appendix No. 7 contains the usual list of contracts, deeds and leases which been prepared and registered in the office of the painstaking and efficient Law Mr. J. A. Chassé.

CONCLUSION.

Before concluding this report I beg to offer the expression of my utmost sat tion to all employees of the department who have assisted in carrying on so su fully the very important works entrusted to them and to myself during the year review, and I must say that they all deserve the greatest praise for the mann which they have acquitted themselves of their duties.

I have the honour to be, sir,

Your obedient servant,

A. GOBEIL,

Deputy Minister

PART II

REPORT OF THE CHIEF ACCOUNTANT

FOR THE

FISCAL YEAR ENDED JUNE 30

1904.

DEPARTMENT OF PUBLIC WORKS, CANADA,
ACCOUNTANT'S OFFICE,
OTTAWA, Dec. 10, 1904.

GOBEIL, Esq.,
Deputy Minister,
Department of Public Works,
Ottawa.

SIR,—In presenting the annual report on the expenditures made by this depart-ent, during the fiscal year ended June 30, 1904, it may not be amiss to make a brief ference to the changes which have taken place during this and the several preced-g years, in both the nature and dimensions of the work of the Accountant's branch.

Of the works carried out under the supervision of this department, although most the larger ones are performed under contract, yet these are few in number compared th the multitude of minor works both of construction and repair, which are executed day labour under the direct oversight of officers of the department, the result being at a considerable proportion of the expenditure of the department, and by far the ger part of the work of this branch, has always been devoted to the direct payment wages for labour and cost of materials, bought at first hand from the producer, for use such works. The immemorial mode of settling such claims has been by sending a ymaster with cash, to visit each locality monthly. There are many objections inse-rable from this method, which it is not necessary to detail at present. Suffice it to say at the expansion of late years, in the work of the department, has been so great that en after doubling the staff of paymasters it was found impossible to keep abreast of e work of payment.

Happily with the growing business prosperity of the country, there has a'so been arge increase in banking facilities in all parts, as is shown by the following figures :

Number of banks and branches in Canada, Jan. 1,				1896.....	530
"	"	"	"	1900.....	675
"	"	"	"	1904.....	1059

In many districts, where a few years ago it was utterly impossible to negotiate ques, and where in fact the meaning of such instruments was hardly understood by bulk of the population, they now pass readily from hand to hand as the equivalent of h, and cheques issued by the Dominion government, being payable at par at all ks, are frequently sought after as a convenient means of making remittances.

It was accordingly decided in September, 1900, to adopt, whenever possible, the n of issuing a separate cheque in favour of each creditor of the department, whether labour or supplies and whether for a large or a small amount. Such cheques are nsmitted by registered letter to the post office address of the payee, or in the case of aylist, to the foreman for distribution. In most cases no receipt is required, the artment trusting for acquittance to the endorsation upon the cheque when paid and rned through the bank. This office is thus enabled to file away its vouchers imme-ely upon the issue of the cheques, in place of waiting for the return of receipts, as necessary under the former system—receipts which not infrequently failed entirely each the department.

The following statement, showing the number of cheques issued, together with the l expenditure of the department, for the fiscal year just clo-ed as compared with the 1899-1900 (the last complete year under the former system), will serve to convey idea of the increase, during the interval, in the annual volume of work performed he staff of this office.

YEAR ENDED JUNE 30, 1900.

	Number of cheques issued.	Amount
Direct payments by departmental cheque—		$
Issued by head office, Ottawa	18,035	2,422,75
" Agencies of the dept	3,762	364,89
Total departmental cheques	21,797	2,787,64
	Number of applications.	
Payments by Receiver General's cheque for contract work, &c., audited before payment, upon applications issued by this office	365	775,37
Total expenditure for year		$3,563,02

YEAR ENDED JUNE 30, 1904.	Number of cheques issued.	Amount.
Direct payments by departmental cheque—		
Issued by head office, Ottawa	38,009	3,748,06
" Agencies of the dept	7,475	556,30
Total departmental cheques	45,484	4,304,37
	Number of applications.	
Payments by Receiver General's cheque &c., &c. (as above).	652	2,187,89
Total expenditure for year		$6,492,27

There are still a number of districts in which cheques do not readily pass cur and for work in these regions the system of paying through a paymaster still ren in vogue, but their area is constantly decreasing, and doubtless, within a few y almost, if not all, the payments of the department will be made by direct cheque.

The adoption of this plan has considerably facilitated prompt payment on those w to which it has been applied, but during the past and current years, the increase i number and magnitude of the works carried on by the department has been such this branch finds great difficulty in coping with the claims daily referred to it fo mediate payment. This state of things causes much inconvenience to the creditor the department. In my opinion, there is but one remedy, an increase in the sta the addition of several competent clerks.

Subjoined are the usual tables showing the various sums expended during the year 1903-04, upon each of the works under control of this department, viz. :—

Statement A, giving for each work the amounts expended for construction repairs severally, and for each province the total cost of staff and maintenance of pu buildings.

Statement B, subsidiary to the above and giving separately for each building cost of rent, salaries, heating, &c.

Statement C, showing amounts advanced by government for the constructio certain works of a semi-public character, under statutory authority and after inspec by officers of this department.

I have the honour to be, sir,
Your obedient servant,

A. G. KINGSTON,
Accountant.

STATEMENTS OF EXPENDITURE

DURING

FISCAL YEAR ENDED JUNE 30, 1904

MENT A.—Showing the Amounts expended by the Department of Public Works of Canada during the fiscal year ending June 30, 1904.

Name of Work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	Total.
PUBLIC BUILDINGS.	$ cts.	$ cts.	$ cts.	$ cts.
Nova Scotia.				
t, post office, &c		2,692 92		2,692 92
lis, post office, &c		135 08		135 08
nish, post office, &c		89 24		89 24
, post office, &c		321 04		321 04
k, armoury, &c	378 00			378 00
k, post office, &c		26 09		26 09
water, post office, &c		376 13		376 13
outh, post office, &c		18 95		18 95
post office, &c	1,677 02	59 81		1,736 83
ro', post office, &c		1,515 59		1,515 59
Asst. Receiver General's office		43 50		43 50
custom house (New)	55,426 81			55,426 81
Dominion Building		1,375 40		1,375 40
examining warehouse		68 72		68 72
immigrant shed	2,340 59	473 48		2,814 07
Lawlor's Island quar. station	5,657 51			5,657 51
lle, post office, &c		32 85		32 85
ol, post office, &c		25 40		25 40
urg, post office, &c		370 62		370 62
ton armoury	2,000 76			2,000 76
experimental farm	465 20	152 60		617 80
lasgow post office		14 50		14 50
Sydney, post office	81 51	56 64		138 15
custom house		25 72		25 72
post office	711 23	107 33		818 56
dward (Sydney) quarantine station		68 70		68 70
ill post office, &c		2,792 11		2,792 11
, post office, &c	4,996 03	186 19		5,182 22
Mines post office, &c	4,590 86			4,590 86
post office, &c		83 87		83 87
r, post office		16 45		16 45
uth, post office, &c		187 68		187 68
g, lighting, water, &c., for all buildings in Scotia			30,198 20	30,198 20
Totals, Nova Scotia	78,325 52	11,316 61	30,198 20	119,840 33
Prince Edward Island.				
tetown, Dominion building	12,040 00	237 38		12,277 38
ue, post office		40 39		40 39
rside, post office		120 49		120 49
g, lighting, water, &c., for all buildings in e Edward Island			6,485 83	6,485 83
Totals, Prince Edward Island	12,040 00	398 26	6,485 83	18,924 09
New Brunswick.				
t, post office, &c		294 08		294 08
ellton, post office, &c	4,078 74			4,078 74
n, (St. John) post office		67 65		67 65
Carried forward	4,078 74	361 73		4,440 47

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	
PUBLIC BUILDINGS—*Continued.*				
New Brunswick—Con.	$ cts.	$ cts.	$ cts.	
Brought forward	4,078 74	361 73		
Chatham, post office, &c		77 10		
" quarantine station		43 74		
Dalhousie, post office, &c		102 44		
Fredericton, post office, &c		189 52		
" military building	4,898 30			
Marysville, post office		277 17		
Moncton, post office	841 93	229 62		
Newcastle, post office	799 96	10 98		
North Head (Grand Manan), post office		155 15		
Partridge Island quarantine station	2,827 04	12 45		
Portland (St. John) post office		6 00		
Richibucto, post office	10,042 49			1
St. John, custom house		1,821 55		
" immigration building		1,713 78		
" post office		982 58		
" savings bank		108 20		
St. Stephen's, post office, &c		20 95		
Sussex, armoury	3,616 56			
" post office, &c		1,178 14		
Tracadie lazaretto	320 86			
Woodstock, armoury	6,106 90			
" post office, &c	2,821 77	26 74		
Heating, lighting, water, &c., for all buildings in New Brunswick			25,834 29	2
Totals, New Brunswick	36,033 69	7,638 70	25,834 29	6
Maritime Provinces.				
Generally			379 61	
Quebec.				
Acton Vale, post office	2,245 36			
Aylmer, post office		397 35		
Berthierville, post office		69 25		
Buckingham, public building		48 66		
Coaticook, public building		5 55		
Drummondville public building		142 32		
Dundee, custom house		35 00		
Granby, public building		375 92		
Grosse Isle, quarantine station	11,994 76	221 56		1
Fraserville, public building		105 34		
Hochelaga, post office		284 21		
Hull, post office		224 25		
Joliette, post office		609 11		
Lachine, post office		59 02		
Laprairie, post office		79 01		
L'Assomption, post office	9,975 10			
Lévis, cattle quarantine		1,390 18		
Lévis, immigrant building		50 00		
Lévis, post office	157 30			
Longueuil, post office	2,838 05			
Montmagny, post office	205 08	16 24		
Montreal, custom house		7,750 38		
" examining warehouse	16,623 00	18,972 94		3
" immigration office		133 00		
" inland revenue office		735 53		
" post office	13,046 76	4,868 34		1
" " power for elevators			3,000 08	
" new postal station (St. Catherine Street)		3,168 55		
Quebec, citadel buildings		2,225 57		
Carried forward	57,085 41	41,967 28	7,000 08	10

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance	Total.
PUBLIC BUILDINGS—*Continued.*	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	57,085 41	41,967 28	3,000 08	102,052 77
Quebec—Concluded.				
, clerk of works office, P. O		64 20		64 20
culler's office		2 24		2 24
custom house		662 99		662 99
engineer's office		5 93		5 93
examining warehouse		1,561 94		1,561 94
King's Wharf building (Marine Dept.)		889 50		889 50
immigration building (Louise Embankment)		1,862 48		1,862 48
immigration office		37 00		37 00
" hospital for trachoma	12,000 18			12,000 18
observatory		22 35		22 35
post office		3,648 31		3,648 31
" power for elevator			200 00	200 00
military buildings:				
artillery workshops	2,967 67			2,967 67
iron foundry	1,051 19			1,051 19
, St. Roch post office		35 59		35 59
ka, immigrant shed		16 53		16 53
nd, public building		401 67		401 67
ki "		119 08		119 08
al, immigration shed		52 07		52 07
oke, drill hall	4,519 70			4,519 70
post office, &c.		292 41		292 41
ost office, &c		979 35		979 35
ri, post office		217 73		217 73
cinthe, drill hall	7,533 40			7,533 40
public building	11,978 38	423 67		12,402 05
me "		127 69		127 69
n's "	38 40	6 00		44 40
is du Mile End, post office	5,487 43			5,487 43
nne, post office, &c	1,584 95			1,584 95
d Mines, post office, &c	7,530 91	287 32		7,530 91
Rivers custom house	4,472 41	1,407 31		4,759 73
post office				1,407 31
eld post office, &c	14,951 44	13 55		14,964 99
ville " "		363 69		363 69
arnham post office		74 73		74 73
generally			546 34	546 34
, lighting, water, &c., for all buildings in Que-			85,725 20	85,725 20
als, Quebec	131,201 47	55,542 61	89,471 62	276,215 70
Ontario.				
lria post office, &c	8,710 97			8,710 97
e post office, &c	968 50	16 50		985 00
tburg post office		224 43		224 43
r " "	800 00	56 79		856 79
" "		155 64		155 64
le " "		551 95		551 95
" "	9,073 30	3 80		9,077 10
ville " "	9,984 04			9,984 04
on " "		518 55		518 55
rd drill hall		4,487 28		4,487 28
post office, &c		217 75		217 75
rg " "	827 47			827 47
lle " "		461 70		461 70
drill hall	651 55			651 55
Place post office, &c		117 80		117 80
arried forward	31,015 83	6,812 19		37,828 02

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	T
PUBLIC BUILDINGS—*Continued.*	$ cts.	$ cts.	$ cts.	
Brought forward	31,015 83	6,812 19		37
Ontario—Continued.				
Cayuga post office, &c		5 90		
Chatham armoury	40 75			
" post office, &c		1,133 56		1
Clinton " "	8,778 37	50 25		8
Cobourg armoury	14,999 57	6 00		15
Cobourg post office, &c	3,545 80	95 16		3
Cornwall " "		1,626 45		1
Deseronto armoury	41 00			
" post office, &c	1,535 07	317 72		1
Dundas armoury	8,146 75	11 20		8
" post office, &c		16 00		
Fort William post office, &c	22,334 67			22
Galt " "		41 57		
Gananoque " "		17 00		
Goderich " "		484 78		
Guelph armoury	5,499 95			5
" post office, &c	18,937 40	12 74		18
Hamilton Immigrant shed		5 00		
Hamilton post office	5,804 28	539 64		6
" " " power for elevators			45 00	
Hawkesbury post office, &c	3,006 40			3
Ingersoll " "		561 07		
Kingston custom house		2,708 32		2
" drill hall, &c	789 54			
" exam. warehouse		131 43		
" inland revenue office		46 34		
" military college	5,020 20			5
" post office		739 05		
Lindsay post office, &c		150 40		
London custom house		741 03		
" drill hall and armoury	60,098 97			60
" post office		2,330 29		2
Napanee post office, &c		565 81		
Niagara Fall, public building		353 84		
Orillia, post office, &c		34 85		
Oshawa "	3,018 75			3
Ottawa, astronomical observatory	44,958 52			44
" departmental buildings (Western)	5,963 21			5
" experimental farm	5,626 00	3,087 81		8
" government printing bureau	6,960 85			6
" major's hill park			5,561 62	5
" militia stores building	1,522 62			1
" national art gallery	1,475 00		748 25	2
" new government coal shed	944 41			
" parliament building	16,851 79			16
" post office	20,474 67			20
" Rideau hall	2,972 50	17,171 36		20
" " grounds $4,944·07; snow $1,230·34; fuel and light $8,000·00; watchman $549·00			14,723 41	14
" royal mint	9 40			
" Victoria memorial museum	76,041 44			76
" generally: parliament grounds			8,026 15	8
" " power for elevators			2,968 75	2
" " removal of snow			2,770 42	2
" " repairs and furniture		161,520 83		161
" " telephone service			7,065 32	7
Owen Sound, post office, &c		428 40		
Paris "		22 30		
Pembroke, post office		46 80		
Carried forward	376,413 71	201,815 09	41,908 92	620

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	Total.
PUBLIC BUILDINGS—*Continued.*	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	376,413 71	201,815 09	41,908 92	620,137 72
Ontario—Concluded.				
th, inland revenue office		47 50		47 50
erboro', custom house		103 30		103 30
" post office		185 48		185 48
rolea "		22 61		22 61
on "	903 06	139 00		1,042 06
t Arthur, immigrant shed		309 31		309 31
" post office		271 24		271 24
t Colborne "		76 49		76 49
t Hope "		1,290 50		1,290 50
cott, custom house		102 37		102 37
" post office		140 11		140 11
Portage, public building		243 98		243 98
nia "	13,800 16	3 45		13,803 61
lt Ste. Marie, post office, &c	24,984 03			24,984 03
th's Falls, post office		6 75		6 75
tford, public building		120 74		120 74
throy "		3 67		3 67
Catharines, drill hall	9,114 50			9,114 50
" post office, &c		177 15		177 15
Thomas "		181 52		181 52
onto, asst. rec. gen. office	2,100 00	569 49		2,669 49
" custom house	10,055 54	929 27		10,984 81
" drill shed	1,362 69	322 45		1,685 14
" examining warehouse	5,035 56	891 55		5,927 11
" post office	19,130 00	21,264 37		40,394 37
" " power for elevators			479 72	479 72
" postal station "A"		901 43		901 43
" " "B"		185 18		185 18
" " "C"	1,204 06			1,204 06
" Junction, post office	14,998 42			14,998 42
nton, post office, &c		9 65		9 65
lkerton "		8 68		8 68
dsor "	831 10	580 64		1,411 74
gham "	5,250 98			5,250 98
dstock "	4,545 58	568 13		5,113 71
" armoury	33 35			33 35
ario generally			1,226 03	1,226 03
ting, lighting, water, &c., for all buildings in ntario.			249,824 59	249,824 59
Totals, Ontario	489,762 74	231,471 10	293,439 26	1,014,673 10
Manitoba.				
ndon, experimental farm	122 35	263 25		385 60
" post office, &c		563 45		563 45
phin, immigrant shed	245 00	453 90		698 90
t Selkirk, immigration building		2,537 08		2,537 08
tage La Prairie post office		28 15		28 15
nnipeg custom house		211 33		211 33
" Dominion lands office		71 00		71 00
" examining warehouse		399 70		399 70
" immigrant shed	489 79	1,347 20		1,836 99
" post office	5,569 25	4,895 69		10,464 94
" " power for elevators			53 60	53 60
" " new building	34,500 00			34,500 00
anitoba generally			178 22	178 22
eating, lighting, water, &c., for all buildings in Manitoba			23,356 02	23,356 02
Totals, Manitoba	40,926 39	10,770 75	23,587 84	75,284 98

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	Total.
PUBLIC BUILDINGS—*Continued.*	$ cts.	$ cts.	$ cts.	$ c
North-west Territories.				
Battleford Dominion lands office		272 00		272
Cattle Quarantine, Corrals at various points	1,000 00			1,000
Calgary court house, &c	120 00	320 49		440
" immigrant building		408 45		408
" post office	778 37	265 51		1,043
Carnduff, court house	304 98	313 19		618
Craik immigrant shed	1,168 90			1,168
Davidson immigrant shed	2,025 00			2,025
Duck Lake immigrant shed	1,564 17			1,564
Edmonton court house		381 75		381
" Dom. lands & registry office		280 65		280
" jail	15,083 77			15,083
" post office		67 48		67
Indian Head experimental farm		169 17		169
Lethbridge court house & custom house		21 90		21
" immigration building		26 25		26
" post office		61 00		61
Lloydminster immigrant shed	17,746 03			17,746
Macleod custom house		159 50		159
" court house	9,999 86			9,999
Medicine Hat court house		331 15		331
Moose Jaw court house	7 00	167 56		174
" " post office	33 56			33
Moosomin court house		360 04		360
Prince Albert court house and post office	22 00	6 00		28
" Dom. lands and reg. office		44 20		44
Red Deer court house and Dominion lands office	4,454 59			4,454
Regina court house		445 31		445
" Dominion lands and registry office		1,067 02		1,067
" immigrant building	4,498 50			4,498
" Lt. Governor's residence		522 55		522
" N.W. M. Police barracks	1,570 00			1,570
" post office	430 00	566 08		996
Rosthern immigrant shed	249 15			249
Saltcoats immigrant shed	156 67			156
Saskatoon " "	411 68			411
Strathcona immigrant shed	593 42			593
Wolseley court house		102 15		102
Yorkton, court house and jail	6,098 70			6,098
North-west Territories generally			9 50	9
Heating, lighting, water, &c., for all buildings in N.W.T.			22,472 66	22,472
Totals, North-west Territories	68,316 35	6,359 40	22,482 16	97,157
British Columbia.				
Agassiz experimental farm	216 44			216
Atlin, post office, &c	221 20	67 50		288
Kamloops, armoury	2,820 31			2,820
" post office, &c	1,703 75	355 89		2,059
Kaslo, drill hall	3,418 76			3,418
Nanaimo, post office	8,256 70	54 76		8,311
Nelson, post office, &c	18,194 17	55 40		18,249
" drill hall	950 87			950
New Westminster, post office	600 00	262 45		862
Revelstoke, drill hall	2,977 33			2,977
Rossland, post office, &c	7,978 48	156 70		8,135
" armoury	583 57			583
Vancouver, drill hall	2,000 00			2,000
" post office	1,585 00	2,104 24		3,689
" " new building	52,000 00			52,000
Carried forward	103,506 58	3,056 94		106,563

PART II.—STATEMENT A.—EXPENDITURE—*Continued*

Name of work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	Totals.
PUBLIC BUILDINGS—*Continued.*	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	103,506 58	3,056 94		106,563 52
British Columbia--Concluded.				
a, drill hall	568 51			568 51
indian office		771 99		771 99
post office		1,841 20		1,841 20
" power for elevators			224 24	224 24
old post office	2,210 96			2,210 96
's Head, quarantine station	5,999 13		402 00	6,401 13
Columbia, generally			1,193 21	1,193 21
, lighting, water, &c., for all buildings in h Columbia			23,823 28	23,823 28
Totals, British Columbia	112,285 18	5,670 13	25,642 73	143,598 04
Yukon District.				
ublic buildings			53,675 28	53,675 28
Public buildings generally.				
of clerks of works and assistants			11,808 44	11,808 44
, stationery, instruments, travelling, &c			9,217 81	9,217 81
Totals, public buildings generally			21,026 25	21,026 25

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.
HARBOURS AND RIVERS.	$ cts.	$ cts.	$ cts.	$ cts.
Nova Scotia.				
Abbott's Harbour		625 58		
Abram's River		1,037 89		
Amaguadees		3,460 97		
Arisaig			2,488 62	
Babin's Cove			99 34	
Bailey Brook		2,742 58		
Barrington (Skerrow-Channel)	8,738 65			
Bayfield			6,789 83	
Benoit Cove		799 91		
Big Pond		154 47		
Boularderie Centre		669 98		
Breton Cove		299 23		
Cariboo Island		1,552 07		
Chebogue			67 77	
Chegoggin Pier		188 67		
Cheticamp (Eastern Harbour)	6,540 06			
Cheticamp Point-wharf		1,223 49		
Cheverie breakwater		1,486 39		
Church Point			2,995 21	
Cow Bay (Port Morien)			21,266 79	
Cow Bay Run breakwater		2,063 94		
D'Escousse wharf			76	
Devils Island			252 55	
Digby pier			313 15	
Donalds Head breakwater			2,218 54	
Drum Head breakwater		4,620 00		
East Bay (repairs to wharf)			263 73	
East Chezzetcook			55 00	
East River, sheet harbour		360 88		
East Berlin breakwater		692 93		
East Jeddore wharf		1,452 78		
Economy wharf		2,079 11		
Finlay's Point wharf		1,466 22		
Five Island wharf			699 97	
Fort Lawrence, landing pier		3,769 25		
Friars' Head, boat harbour		578 96		
Fruids Point wharf		1,425 20		
Georgeville wharf		2,499 70		
Grand Etang harbour		2,279 78		
Grand Narrows wharf			2,478 79	
Grand River		648 41		
Granville Centre			199 50	
Great Tancook Island			239 58	
Green Cove		6,432 50		
Halifax graving dock				10,000 00
Hampton			49 99	
Harbourville			499 71	
Hawk Point inlet		500 04		
Herring Cove (Halifax Co.)		8,159 00		
Hortons Landing			70 20	
Iona wharf		684 45		
Indian Brook Flats, Cape Sable Island, wharf		672 90		
Ingonish (North Bay)		542 76		
Island Point, wharf			915 31	
Janvrin's Island		24 20		
Judique, breakwater			398 48	
Kingsport			5,052 61	
L'Ardoise, breakwater		104 27		
Larry's River, breakwater		13,627 50		
Lingan, beach protection		998 05		
Little Harbour, (or Arnold Point)		2,013 49		
Carried forward	15,278 71	71,937 55	47,415 43	10,000 00

PART II.—STATEMENT A.—EXPENDITURE.—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
RBOURS AND RIVERS—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	15,278 71	71,937 55	47,415 43	10,000 00	144,631 69
Nova Scotia—Con.					
rpool	4,945 28				4,945 28
gston's Cove			1,800 00		1,800 00
eport, beach protection		225 56			225 56
r Washabuck		399 81			399 81
r West Pubnico		895 62			895 62
ay's Point, wharf		191 15			191 15
air's Cove		4,768 13			4,768 13
utt's Island		489 28			489 28
ou Harbour	3,842 86		399 59		4,242 85
gawatch		299 99			299 99
a Dieu, breakwater		98 45			98 45
gnant Cove			1,099 07		1,099 07
aree Harbour		799 94			799 94
aretville			510 72		510 72
orne wharf		715 52			715 52
ghan (Cove)			2,342 31		2,342 31
ghan River			300 99		300 99
le River		1,406 35			1,406 35
die wharf			132 25		132 25
uodoboit		271 39			271 39
m Teuch wharf		4,421 45			4,421 45
Harbour, breakwater		3,180 00			3,180 00
llton			235 21		235 21
Harbour, breakwater, &c.			741 74		741 74
Gut, St. Anns			85 03		85 03
River, St. Anns			689 68		689 68
n's Pond		1,449 87			1,449 87
er's Cove			1,191 10		1,191 10
boro'		922 10			922 10
idge Island			75 65		75 65
oroke, breakwater		4,096 81			4,096 81
de Grat			3,022 81		3,022 81
tt's Pier			2,309 65		2,309 65
u	6,924 98				6,924 98
u Island			71 00		71 00
ney's Point			68 26		68 26
ant Bay		71 85			71 85
erville or Lower d'Escousse		4,608 00			4,608 00
r's Lake		325 15			325 15
au Pique		543 62			543 62
Bevis (Big Harbour)		151 86			151 86
George breakwater		5,807 95			5,807 95
Greville			697 59		697 59
Hawkesbury		8,122 50			8,122 50
Hood	2,078 58	2,968 85	1,500 09		6,547 52
Howe, wharf		1,964 19			1,964 19
La Tour, breakwater		1,097 64			1,097 64
Maitland		1,503 25			1,503 25
unond			334 97		334 97
ect, wharf		453 62			453 62
ed Head, boat harbour		200 00			200 00
Head			400 04		400 04
y Cove, breakwater		9,232 00			9,232 00
's Bay		1,346 52			1,346 52
Harbour		337 63			337 63
Beach		6,799 00			6,799 00
Point			82 06		82 06
Gut, St. Anns			493 21		493 21
Ingonish wharf		2,590 00			2,590 00
Bay wharf		508 94			508 94
Carried forward	33,070 41	145,200 54	65,998 85	10,000 00	254,269 80

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	To
HARBOURS AND RIVERS—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	$
Brought forward	33,070 41	145,200 54	65,998 85	10,000 00	254
Nova Scotia—Con.					
Swim's Point wharf		1,214 56			1,
Sydney quarantine station			1,566 04		1,
Tenecape breakwater		2,019 48			2,
Tidnish			374 59		
Tiverton, breakwater		15,308 00			15,
Tracadie, breakwater			425 28		
Upper Port Latour		800 00			
Victoria Beach, wharf		120 27			
Washabuck Centre wharf		6,055 00			6,
Wedge Point		1,701 61			1,
West Baccaro		3,500 00			3,
West Bay, Richmond (South Side)wharf		1,747 98			1,
West Chezzetcook breakwater			44 74		
Western Head		3,653 85			3,
West Woods Harbour		686 93			
Whitehaven			500 79		
White's Cove		1,839 66			1,
Windsor Harbour			98 71		
Wolfville Wharf			1,768 89		1,
Yarmouth	1,123 46		325 57		1,
Generally, Nova Scotia				4,151 26	4,
Totals, Nova Scotia	34,193 87	183,847 88	71,103 46	14,151 26	303,
Prince Edward Island.					
Bay Fortune breakwater			149 98		
Bay View			47 61		
Beach Point		334 49			
Belfast (Halliday's wharf)	2,946 54				2,
Campbell's Cove			94 89		
Cascumpec harbour		1,072 75			1,
China Point			125 56		
Cove Head harbour		5,917 40			5,
Crapaud			57 75		
Gaspereau		499 84			
Lambert's Pier	2,946 54	7,824 48	475 79		11,
Lewis Point			1,088 93		1,
Lower Montague (Aitkin's wharf)		2,174 80			2,
Miminigash			350 15		
Morell	1,967 13				1,
New London		781 11	477 15		1,
North Cardigan Pier		2,699 88			2,
Point Prim wharf		396 04			
Richmond Bay		1,335 62			1,
Rustico harbour		23 60			
St. Peter's Bay breakwater		1,557 50			1,
Souris, Knight's Point			9,468 09		9,
Summerside harbour		12,510 53			12,
Sturgeon Pier			59 62		
Tidnish, rebuilding northern breakwater		699 93			
Vernon River	8,871 00		299 26		9,
Victoria Pier			26 94		
Wood Islands		884 50			
West Point wharf			1,438 81		1,
Harbours generally (P.E.I)				2,516 24	2,
Totals, P.E. Island	13,784 67	30,887 99	13,684 74	2,516 24	60,

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
ARBOURS AND RIVERS—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
New Brunswick.					
lerson's Hollow			1,797 22		1,797 22
du Vin, wharf		365 00			365 00
iveau, wharf			750 00		750 00
k Brook (Loggieville)		5,060 96			5,060 96
touche wharf			2,438 93		2,438 93
nt Church			321 82		321 82
npbellton, Ferry wharf		3,100 00			3,100 00
" wharf extension and repairs			4,584 18		4,584 18
npobello (Wilson's Beach)			8,055 40		8,055 40
e Tormentine		10,109 42			10,109 42
aquet	6,316 53	11,629 00			17,945 53
tham	905 60				905 60
ckfish, extension of training pier		1,993 80			1,993 80
ton (Stonehaven)		2,289 50			2,289 50
agne wharf				250 00	250 00
housie, harbour improvement		123 72			123 72
per Harbour		493 04			493 04
gett Landing			410 00		410 00
getown	1,772 18				1,772 18
nd Anse		2,515 69			2,515 69
nd Lake (Jemseg Channel)	4,760 88				4,760 88
" (Newcastle)	1,336 06				1,336 06
pewell Cape			4,641 83		4,641 83
" Hill		244 56			244 56
tle Salmon River			634 78		634 78
d's Cove—Deer Island		1,050 00			1,050 00
cou Harbour—wharf		73 72			73 72
pec Harbour		991 68			991 68
guac	8,592 33				8,592 33
wcastle (Miramichi)	1,050 70				1,050 70
rch Head Grand Manan b'water whf.		42 67			42 67
tridge Island			500 00		500 00
it Rocher—breakwater		351 65			351 65
nt du Chene 1,705 96					
s repaid by I.C. Ry. 315 00					
	1,390 96				1,390 96
nt du Chene breakwater			1,746 68		1,746 68
oo			450 08		450 08
l Store (wharf) St. George			150 78		150 78
hibucto	9,549 12	1,589 67			11,138 79
" River			583 00		583 00
er St. John—Including tributaries—					
Edmonston 4,551 19					
Grand Falls 4,525 58					
" breakwater. 1,284 49					
Grand River Madawaska 250 00					
roquois 275 76					
Little Tobique 399 00					
" Forks 100 00					
Madawaska 358 62					
Main River 110 65					
Serpentine River 400 00					
Tobique River 548 00					
" Rocks 460 61					
St. Francis River 450 19					
St. John River improvem 256 28					
Mouth of Salmon River to mouth of Crookston River 200 00					
Between Fredericton and Woodstock 137 76					
Generally 886 07					
		15,194 20			15,194 20
Carried forward	35,674 36	57,218 28	27,064 70	250, 00	120,207 34

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and improvements.	Repairs.	Staff and Maintenance.	T
HARBOURS AND RIVERS—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	$
Brought forward	35,674 36	57,218 28	27,064 70	250 00	120,
New Brunswick—Con.					
River St. John, wharfs in tidal wat—					
Belyeas 349 13					
" Cove (Wickham) 231 00					
Burton 180 00					
Cedars 309 00					
Clifton 60 85					
Coles Island 388 50					
Courthouse 240 00					
Brown's Flats 362 14					
Dunbains 546 00					
Flewelling 288 73					
" (Westfield) 240 80					
Gerows 341 25					
Hatfield Point 379 91					
Holderville 436 49					
Humphreys Point 308 18					
Jenkins Cove 426 03					
McGowan (high water) 161 09					
Oak Point 182 70					
Oromocto 208 23					
Parkers 258 75					
" (low water) 284 18					
Sewells 276 50					
Thomsons 76 01					
Topleys 155 65					
Upper Gagetown 482 00					
Wickham 550 02					
		7,813 14			7,
River St. John (wharf at Oromocto)	4,577 67	6,618 25			11,
St. John Harbour (Negro Point b'water)		12,173 43			12,
St. John Harbour—dredging	14,502 94				14,
St. John Harbour, protection work at base of Fort Dufferin			3,499 66		3,
St. Nicholas River			97 00		
Shippegan Harbour			1,097 85		1,
Shippigan, (wharf at Lameque)		1,630 00			1,
Springhill (York Co)	1,586 72				1,
Tracadie			844 66		
Tynemouth Creek			1,001 00		1,
Upper Salmon River (Alma Pier)		3,455 00			3,
Generally				4,151 26	4,
Totals, New Brunswick	56,341 69	88,908 10	33,604 87	4,401 26	183,
Quebec.					
Anse à Beaufils			496 80		
Anse aux Gascons		2,765 50			2,
Anse aux Grip Fonds		1,999 06			1,
Anse St. Jean		3,048 04			3,
Baie St. Paul, repairs to wharf at Cap aux Corbeaux			3,279 66		3,
Baie des Rochers			620 97		
Barachois de Malbaie		225 21			
Beauharnois			1,261 50		1,
Belœil guide piers	8,012 67				8,
Bergeronnes			25 60		
Berthier (en haut)			494 69		
Berthier (en bas)			447 96		
Bic, pier at Pointe à Coté, &c			1 58		
Bois Brûlé, training pier		1,704 24			1,
Carried forward	8,012 67	9,742 05	6,628 76		24,

PART II.—STATEMENT A—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
BOURS AND RIVERS—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	8,012 67	9,742 05	6,628 76		24,383 48
Quebec—Con.					
nture East b'water		5,000 03			5,000 03
rville			10 40		10 40
		2,298 35			2,298 35
breakwater		5,118 80			5,118 80
			552 21		552 21
a Madeline			799 49		799 49
té			16 20		16 20
rd wharf		1,541 67			1,541 67
ain wharf			4,628 07		4,628 07
Richer		8 00			8 00
du Lac			914 36		914 36
mi wharf			1,045 03		1,045 03
Landing	1,908 00		190 47		2,098 47
sland, South Side			3,096 07		3,096 07
oint		5,755 00			5,755 00
nbault wharf		2,972 00			2,972 00
ns, Alumet Island wharf		113 41			113 41
Landing	11,800 15				11,800 15
town		1,048 91			1,048 91
mpleman wharf		33 92			33 92
River		2,865 89	9 80		2,875 69
ains		499 38			499 38
Point, landing pier		39,162 26			39,162 26
u River, protection east bank		2,845 15	17 54		2,862 69
ille			78 57		78 57
wharf	11,851 60				11,851 60
Rivière wharf		765 79			765 79
Mechins		242 74			242 74
Bergeronnes			224 38		224 38
Vallée, pier		19,830 00			19,830 00
es wharf		4,395 60			4,395 60
wharf		1,230 82			1,230 82
arf			40 79	28 00	68 79
			412 84		412 84
Coudres		2,042 94			2,042 94
rot			437 80		437 80
rte		800 00			800 00
aska		3,915 81			3,915 81
ons Landing			176 52		176 52
egantic			51 13		51 13
. John wharfs—					
nd Decharge			182 17		182 17
Methode			792 08		792 08
erally				824 35	824 35
. John dredging—					
erval	3,445 11				3,445 11
erally				8 66	8 66
ominingue		2,017 22			2,017 22
e			10 61		10 61
ption	209 00				209 00
e, ice piers &c		14,951 00			14,951 00
ulements			394 73		394 73
aving dock				15,223 50	15,223 50
eau, Descente des Femmes, wharf					
ver Saguenay		3,018 33			3,018 33
'Alma, removal of rock		1,501 97			1,501 97
			496 17		496 17
ère		6,971 97			6,971 97
St. Lawrence, removal of rock—					
à Beaufils			100 00		100 00
Carried forward	37,226 53	140,689 01	21,306 19	16,084 51	215,306 24

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.
HARBOURS AND RIVERS—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	37,226 53	140,689 01	21,306 19	16,084 51
Quebec—Con.				
Lower St. Lawrence—				
Cap Blanc Percé			11 01	
Cape Cove			100 00	
Cap des Rosiers			101 19	
Cape Madeleine			50 00	
Cap Rouge			50 00	
Chlorydormes			267 21	
Grandes Bergeronnes			298 65	
Lake Beaulieu			297 76	
Little Fox River			50 00	
Little Valley			50 00	
Petite anse Chlorydormes			109 26	
Petite Tourelle			100 00	
Percé			289 20	
Percé, Red Head			287 62	
Petite Rivière			125 00	
Rivière Ste. Anne			164 00	
Roches Noires, Petite Rivières			50 00	
St. Anne des Monts			189 90	
Magdalen Islands, breakwaters				
Amherst		4,476 32		
Grand Entry		26 00		
Grindstone		9,408 76		
House Harbour		112 28		
Pointe à Elie		10,431 50		
Magog			1,806 58	
Maguasha landing pier		3,998 70		
Maria Pier		20,640 65		
Matane			2,973 34	
Mistook (Delisle) wharf		2,061 04		
Montebello	86 25			
Mount Louis wharf		4,999 69		
Montmagny wharf			123 53	
Montreal Harbour		209,104 96		
New Carlisle			1,300 93	
Newport breakwater		63 63		
New Richmond breakwater		2,439 71		
Nicolet River	11,723 81			
Notre Dame du Portage		119 65		
Paspébiac, landing pier		5,705 82		
Percé wharf (North Cove)		1,387 26		
Percé South Beach			399 63	
Petites Bergeronnes		611 36		
Petite Cap			100 00	
Philipsburg			15 19	
Pierreville	3,116 55	3,816 91		
Pointe aux Esquimaux		5,099 93		
Pointe aux Trembles (Portneuf Co.)		1,343 88		
Pointe Claire			150 00	
Point Fortune		1,078 93		
Pointe St. Pierre, breakwater		9,800 00		
Port Daniel		5,441 79		
Quebec Harbour, improvements		68,347 33		
Rigaud	1,394 50			
Repentigny wharf		204 06		
Rimouski wharf		27,236 75		
River St. Lawrence ship channel		582,040 92		
River aux Renards		1,550 95		
River Batiscan	7,440 50			
River Ottawa—				
Blanche Shoals 5,246 00				
Calumet 3,283 10				
Cobb Island 480 00				
Grenville 1,575 57				
	10,602 67			
Carried forward	71,590 81	1,122,237 79	30,766 59	16,084 51

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
OURS AND RIVERS.—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	71,590 81	1,122,237 79	30,766 59	16,084 51	1,240,679 70
Quebec—Continued.					
hateauguay	2,140 95				2,140 95
u Lievre, dredging at mouth	880 00				880 00
" Lock			3,641 66	995 49	4,637 15
Loup (Fraserville)		3,613 20			3,613 20
" (en haut)	2,523 00				2,523 00
esus	6,312 00				6,312 00
uelle pier			5,846 34		5,846 34
ichelieu	437 43		1,259 88		1,697 31
aguenay	621 89			12 50	634 39
t. Francis, ice pier, Richmond		10,620 91			10,620 91
t. Louis		63 45		150 00	213 45
t. Maurice Channel, between Piles and La Tuque	7,751 53				7,751 53
. Maurice, mouth	13,878 50				13,878 50
erte, wharf		3,698 76			3,698 76
			653 45		653 45
r, wharf		951 39			951 39
wharf	721 11	693 14			1,414 25
Baie des Ha Ha, pier		4,067 41			4,067 41
se de Bagotville			2,465 77		2,465 77
de Kamouraska			3,120 42		3,120 42
des Monts			199 45		199 45
de la Pocatière		4,280 70			4,280 70
de la Pérade			3,000 00		3,000 00
de Sorel			5,353 54		5,353 54
du Saguenay, wharf		1,101 80			1,101 80
ws	2,478 97				2,478 97
	253 67				253 67
le, I.O		4,029 63			4,029 63
n			302 94		302 94
wharf		3,704 85			3,704 85
s River	134 33				134 33
is, breakwater, south shore,		8,305 96			8,305 96
		998 37			998 37
Islands wharf		2,172 04			2,172 04
ièvre, piers and spans			2,492 94		2,492 94
oi de Nouvelle		2,557 27			2,557 27
wharf		7,613 06			7,613 06
.O			1,266 53		1,266 53
s Chaillons wharf	1,004 18	44 83			1,049 01
ort Joli			1,116 41		1,116 41
(Lake St. John) wharf		2,091 92			2,091 92
	1,740 36				1,740 36
t, I.O			122 21		122 21
wharf		501 93			501 93
s wharf			1 38		1 38
de Bellechasse	861 21		4,581 26		5,442 47
s			142 14		142 14
		2,992 20			2,992 20
es Aulnaies			316 57		316 57
n pier			1,158 15		1,158 15
			509 01		509 01
d wharf		25,009 06			25,009 06
		2,818 02			2,818 02
water wharf		44,224 75			44,224 75
ers		2,280 59			2,280 59
wharf			471 73		471 73
a Lake (Notre Dame du Lac)			1,199 50		1,199 50
rs harbour		49,179 03			49,179 03
rried forward	113,329 94	1,309,852 06	69,987 87	17,242 50	1,510,412 37

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	T
HARBOURS AND RIVERS—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	
Brought forward	113,329 94	1,309,852 06	69,987 87	17,242 50	1,51
Quebec—Con.					
Trois Lacs or Flints Landing		731 88			
Trois Pistoles breakwater		5,045 44			
Valleyfield	4,032 00				
Verchères		5,228 00			
Ville-Marie (Lake Temiscamingue)		6,633 55			
Yamaska lock and dam			3,698 21	1,244 52	
Yamaska River	6,399 42				
Generally	5,464 24			7,896 71	1
Totals, Quebec	129,225 60	1,327,490 93	73,686 08	26,383 73	1,55
Ontario.					
Amherstburg—dredging	10 92				
Barrie		3,225 13			
Barrys Bay (Madawaska River)		14 14			
Bayfield	2,065 33	6,668 58	402 79		
Beaverton			50 56		
Blind River, wharf		7,418 42			
Bowmanville			1,000 00		
Bracebridge wharf		2 90			
Brockville	3,480 00				
Bronte		6,139 28			
Bruce Mines			85 00		
Burk's Falls		1,780 75			
Burlington Channel			55,282 69	3,017 44	5
Christian Island			400 00		
Cockburn Island			399 74		
Cobourg			4,999 99		
Colborne			3,024 97		
Collingwood	65,411 65				
Cornwall			48 00		
Cumberland		118 31			
Depot Harbour	10,974 70	95,159 41			10
Gananoque	7,494 25				
Georgian Bay, Pte au Baril route		1,352 57			
Goderich	1,317 74	17,499 99			1
Gore's Landing wharf		2,932 05			
Grand Bend, breakwater		298 64			
Grand River, Dunnville	10,631 40				1
Haileybury, Lake Témiscamingue		8,842 18			
Hamilton	1,017 22				
Hawkesbury	4,004 00		184 86		
Hiawatha			1,038 50		
Hilton, St. Joseph Island			39 90		
Honora		182 65			
Kincardine	1,946 00		1,142 15		
Kingston, harbour	4,233 30				
" graving dock		46,096 12		5,806 48	5
Kingsville			998 96		
Lakes Simcoe and Couchiching	7,834 00	1,976 45			
Lancaster			98 83		
Leamington		3,733 65			
Little Bear Creek	1,810 00				
Little Current		200 75			
L'Original wharf		974 52			
Meaford		315 20	1,989 33		
Midland	21,242 65	4,769 51			2
McCrackens landing			790 72		
McGregor's Creek		4,536 00			
Monetville, Lake Nipissing			578 17		
Morpeth			199 81		
Carried forward	143,473 16	214,237 20	72,754 97	8,823 92	43

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
RBOURS AND RIVERS—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	143,473 16	214,237 20	72,754 97	8,823 92	439,289 25
Ontario—Con.					
t Julien			239 77		239 77
stle			7,999 60		7,999 60
Liskeard, Lake Témiscamingue	4,685 80				4,685 80
Bay			10 66		10 66
le		6,634 67	6,000 00		6,000 00
a			80 52		6,634 67
a, dock at foot of locks			104 77		80 52
Sound	15,984 85				104 77
Sound		263 62			15,984 85
Island wharf		1,518 00	400 00		263 62
oke wharf		341 84			1,918 00
nguishene	7,696 90				341 84
ing			500 00		7,696 90
Edward (Sarnia)	21,583 10				500 00
rthur	94,777 04		14,002 64		21,583 10
urwell	4,276 88	26,966 27			108,779 68
olborne		143,026 91			31,243 15
lgin	1,100 00		2,830 17		143,026 91
ope	1,534 38		5,000 00		3,930 17
anley			288 38		6,534 38
t	4,055 50				288 38
St. Lawrence (dredging at Wolf and)	8,571 25				4,055 50
aux Puces			1,584 70		8,571 25
Kaministiquia	64,921 97				1,584 70
Otonabee	5,403 34				64,921 97
Ottawa, Narrows above Pembroke	7,000 00				5,403 34
ydenham	3,677 57				7,000 00
hames	20 00				3,677 57
s Landing			143 44		20 00
u Harbour	6,498 29		11,646 22		143 44
le wharf		985 64			18,144 51
	5,651 40				985 64
te. Marie		13,669 42			5,651 40
eph, Lake Huron		4,604 11			13,669 42
n Falls		4,123 18			4,604 11
on		417 27			4,123 18
ury		1,499 90			417 27
o Harbour, eastern entrance	2,106 00	42,574 73			1,499 90
	1,860 00				44,680 73
a Harbour	6,964 10				1,860 00
ver		1,097 48			6,964 10
n		14 08			1,097 48
lly	9,667 02			8,688 95	14 08
					18,355 97
Totals, Ontario	421,508 55	461,974 32	123,585 84	17,512 87	1,024,581 58
Manitoba.					
harf			1,111 83		1,111 83
arbour wharf		1,306 72			1,306 72
wharf		1,480 20			1,480 20
ic River wharf		844 04			844 04
auphin, lowering	2,224 26				2,224 26
rances, outlet	3,124 68	2,867 79			5,992 47
anitoba (outlets)	2,243 59				2,243 59
ver—Mouth	7,345 15				7,345 15
rew's Rapids (Red River)	2,847 89	2,953 23			5,801 12
Mud River		17,380 20			17,380 20
lly	3,469 70				3,469 70
	600 12			2,405 04	3,005 16
Totals, Manitoba	21,855 39	26,832 18	1,111 83	2,405 04	52,204 44

PART II.—STATEMENT A —EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	T
HARBOURS AND RIVERS—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	$
British Columbia.					
Anderson Lake		999 14			
Atlinto River			50 00		
Columbia River, above Revelstoke		5,921 27			5
" " " Golden		8,492 69			8
" " below Golden		4,924 87			4
" " between Upper and Lower Arrow Lakes	11,783 58				11
Columbia River (bal. dredge machinery)		3,000 00			3
Duncan River	1,993 15				1
Esquimalt, graving dock				12,854 55	12
Fraser River	31,735 25		30,579 67		62
Hardy Bay, wharf		1,564 20			1
Kennedy Lake		1,499 95			1
Northern Thomson River		4,746 10			4
Quatsino City, wharf		4,991 70			4
Salmon River		2,630 21			2
Sidney Harbour		7,739 36			7
Skeena River		4,949 71			4
Spallumchin River		1,490 16			1
Victoria Harbour	31,659 54		34 25		31
William's Head, quarantine sta. wharf		10,973 05			10
Generally				1,403 21	1
Totals, British Columbia	77,171 52	63,922 41	30,663 92	14,257 76	186
Yukon Territory.					
Lewis and Yukon Rivers		9,569 22			9
Totals Yukon		9,569 22			9
Harbour and Rivers Generally.					
General expenses of staff, &c	4,788 77			8,547 73	13
DREDGES AND DREDGING PLANT.					
Maritime Provinces		126,001 03	(a)		126
Ontario and Quebec		204,390 06	30,796 53		235
Manitoba			6,724 12		6
British Columbia		1,270 75	4,999 45		6
Totals, Dredges and Dredging Plant		331,661 84	42,520 10		374
SLIDES AND BOOMS.					
Richelieu River—					
Beloeil booms				549 55	
St. John's boom			35 50		
Ottawa District—					
Ottawa River			5,409 78	24,399 49	29
Black River			269 86	24 40	
Cheneaux booms allowance to Improvement Co				1,438 31	1
Coulonge River			1,076 17		1
Dumoine River			978 94		
Gatineau River			893 45	1,052 57	1
Madawaska River			407 01	137 42	
Petewawa River			6,016 65	65 43	6
St. Maurice District		45,934 53	588 52	30,142 19	76
Trent and Newcastle District			1,862 53	2,060 29	3
Collection of Slide and Booms dues				4,206 78	4
Totals, Slides and Booms		45,934 53	17,538 41	64,076 43	127

(a) Cost of repairs ($13,996 32) apportioned with dredging, see various harbours in Maritime Pr

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
ROADS AND BRIDGES.	$ cts.	$ cts.	$ cts.	$ cts.
Quebec and Ontario.				
Joachims Bridge, Ottawa River	81 00			81 00
e Post Road, North Shore St. Lawrence	698 51			698 51
va, Maria St., (Laurier) Bridge	2,349 50			2,349 50
va City bridges and streets maintained by Govt—				
Cartier Square—permanent sidewalks	741 16			741 16
Chaudière bridges and approaches		2,053 53		2,053 53
t. Patrick St.—printing bureau		60 48		60 48
appers and Dufferin bridges and Wellington st.	1,350 00	4,783 43		6,133 43
Lighting all the above			2,949 50	2,949 50
ge du Fort Bridge, Ottawa River	10,750 72			10,750 72
Bridge, Grand River			198 34	198 34
North-west Territories.				
eford Bridge, Battle River	1,413 23			1,413 23
onton Bridge, Saskatchewan River		1,509 65		1,509 65
ry Bridge, Bow River		750 66		750 66
ridge Belly River	43,918 52			43,918 52
" Ferry (temporary)			328 50	328 50
od Bridge, Old Man's River	29,000 00			29,000 00
rally N. W. T			822 56	822 56
Totals, Roads and Bridges	90,302 64	9,157 75	4,298 90	103,759 29
TELEGRAPH LINES.				
Newfoundland.				
Ray line (subsidy)			250 00	250 00
Nova Scotia.				
Bras d'Or to Upper Kempt Head, Boularderie Island	1,486 19			1,486 19
Scamp—Meat Cove line			6,972 23	6,972 23
eters to Louisburg, Scatarie and North Sydney	14,042 46			14,042 46
" Canso	957 89			957 89
Prince Edward Island.				
Island and mainland (subsidy)			1,946 66	1,946 66
New Brunswick.				
	428 28			428 28
Island to Eastport, Me			1,676 15	1,676 15
of Fundy line			411 92	411 92
minac line				
Quebec.				
osti-Gaspé lines		2,388 41	5,541 68	7,930 09
Isle—Chateau Bay (Marconi system)	3,312 21		188 71	3,500 92
ux Coudres line			150 00	150 00
d of Orleans and Grosse Isle	937 89		2,157 59	3,095 48
n Shore, east of Bersimis	3,150 70	3,619 87	10,571 26	17,341 83
" west "	609 54		5,680 08	6,289 62
Islen Islands lines	3,959 44		3,111 48	7,070 92
enay River lines, east side	4,866 82			4,866 82
" west side	7,940 79			7,940 79
rally, Gulf and Mar. Provinces			14,125 68	14,125 68
expenses ss. 'Tyrian'			23,348 63	23,348 63
Ontario.				
Island line		2,119 25	182 27	2,301 52
Carried forward	41,692 21	8,127 53	76,314 34	126,134 08

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Construction and Improvements.	Repairs.	Staff and Maintenance.	To
TELEGRAPH LINES.	$ cts.	$ cts.	$ cts.	
Brought forward	41,692 21	8,127 53	76,314 34	126,
North-west Territories.				
Edmonton to Athabaska Landing	6,668 44			6,
" Edmonton Indian agency	151 11			
Lloydminster loop line	4,034 25			4,
Victoria, Andrew loop line	527 32			
Wood Mountain to Willow Bunch	3,960 90			3,
Generally N. W. T			19,938 62	19,
British Columbia and Yukon District.				
Alberni-Cape Beale			483 00	
Alberni-Clayoquot			3,888 42	3,
Ashcroft-Dawson	1,039 37		199,226 14	200,
Golden-Windermere			3,622 75	3,
Kamloops-Nicola		752 62	611 70	1,
Nanaimo-Comox			3,725 23	3,
Vancouver-Saltspring	1,006 30		264 62	1,
Victoria-Cape Beale			5,604 53	5,
Generally, B.C			749 07	
Telegraph service, generally			3,305 04	3,
Totals, Telegraphs	59,079 90	8,880 15	317,733 46	385,
MISCELLANEOUS.				
Arbitrations and awards			1,480 12	1
Cement testing laboratory			1,428 71	1
Surveys and inspections			50,651 12	50
Surveys of headwaters of Ottawa River and tributaries			6,760 60	6
Temporary employees—				
Secretary and accountant's staff			42,435 36	42
Chief architect's staff			30,501 39	30
Chief engineer's staff			72,834 16	72
Supt. tel. service staff			4,225 00	4
Departmental photographer			800 00	
Technical and other books of reference			577 94	
Transportation commission			7,389 11	7
Gratuity to daughters of late Thos. Ryan			200 00	
" " father of late Jos. Charette			166 66	
" " widow " Jas. Russell			66 66	
" " " " A. Nadeau			50 00	
" " " " J. Harrington			100 00	
" " Dist. Supt. Jas. Wilson, on retiring			300 00	
Public Works agency B.C.			920 89	
Totals, Miscellaneous			220,887 72	220

PART II.—STATEMENT A.—EXPENDITURE—*Concluded.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
RECAPITULATION.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Public Buildings—					
a Scotia		78,325 52	11,316 61	30,198 20	119,840 33
ce Edward Island		12,040 00	398 26	6,485 83	18,924 09
Brunswick		36,033 69	7,638 70	25,834 29	69,506 68
itime Provinces generally				379 61	379 61
bec		131,201 47	55,542 61	89,471 62	276,215 70
ario		489,762 74	251,471 10	293,439 26	1,014,673 10
itoba		40,926 39	10,770 75	23,587 84	75,284 98
th-west Territories		68,316 35	6,359 40	22,482 16	97,157 91
ish Columbia		112,285 18	5,670 13	25,642 73	143,598 04
on				53,675 28	53,675 28
lic Buildings generally				21,026 25	21,026 25
Harbours and Rivers—					
a Scotia	34,193 87	183,847 88	71,103 46	14,151 26	303,296 47
ce Edward Island	13,784 67	30,887 99	13,684 74	2,516 24	60,873 64
Brunswick	56,341 69	88,908 10	33,604 87	4,401 26	183,255 92
bec	129,225 60	1,327,490 93	73,686 08	26,383 73	1,556,786 34
ario	421,508 55	461,974 32	123,585 84	17,512 87	1,024,581 58
itoba	21,855 39	26,832 18	1,111 83	2,405 04	52,704 44
sh Columbia	77,171 52	63,922 41	30,663 92	14,257 76	186,015 61
on		9,569 22			9,569 22
bours and Rivers generally	4,788 77			8,547 73	13,336 50
dredges and dredging plant		331,661 84	42,520 10		374,181 94
slides and booms		45,934 53	17,538 41	64,076 43	127,549 37
roads and bridges		90,302 64	9,157 75	4,298 90	103,759 29
telegraph lines		59,079 90	8,880 15	317,733 46	385,693 51
Miscellaneous				220,887 72	220,887 72
and totals of expenditure	758,870 06	3,689,303 28	754,704 71	1,289,395 47	6,492,273 52

PART II.—STATEMENT B.—Showing the cost of the following services for each Building, &c.; (the total for each province being carried into Statement '

Name of Building.	Rents.	Salaries of Engineers &c.	Heating.	Lighting.	Water.
Nova Scotia.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Amherst post office &c		415 00	204 76	210 33	
Annapolis "		400 00	203 35	110 25	40 00
Antigonish "		401 82	121 43	92 96	10 00
Arichat "		119 14	275 60	5 90	
Baddeck "		258 60	133 50	57 30	
Dartmouth "		251 80	161 70	93 75	22 40
Digby "		409 57	192 50	323 09	60 00
Guysboro' "		50 62	8 58	129 02	
Halifax, Asst. Receiver General's office.	1,217 40		51 40	83 80	
" custom house (new)				15 00	
" dominion building	2,531 91	1,784 51	3,388 52	422 99	
" drill shed		1,000 00			
" engineer's office	374 00				
" examining warehouse	500 00	453 19	211 14	63 30	
" immigrant shed		633 25	668 19	707 60	
Kentville post office, &c		401 15	4 25	226 25	37 50
Liverpool "		404 75	215 00	171 10	18 00
Lunenburg "		324 15	213 50	220 40	59 00
New Glasgow "		305 54	137 43	262 72	100 00
North Sydney "		403 60	186 75	459 51	29 50
Pictou custom house		42 25	162 62	8 50	25 00
" post office		544 08	163 80	255 40	25 00
Springhill post office, &c		467 02	239 80	395 48	45 00
Sydney "		419 03	135 45	779 68	35 00
Truro "		395 12	134 85	333 77	30 00
Windsor "		419 27	324 42	209 50	75 00
Yarmouth "		424 29	340 00	647 60	72 00
Totals, Nova Scotia, carried to statement A, page 3	2,091 40	11,475 15	6,274 53	9,250 73	1,106 39
Prince Edward Island.					
Charlottetown Dominion building		2,242 07	590 19	1,903 59	231 50
" engineer's office	240 00				
Montague post office		167 48	96 78	40 30	
Summerside "		422 55	389 13	162 24	
Totals, Prince Edward Island carried to statement A, page 3	240 00	2,832 10	1,076 10	2,106 13	231 50
New Brunswick.					
Bathurst post office, &c		470 52	484 69	80 92	
Carleton, St. John, post office	85 85	100 00	46 00	76 75	8 50
Chatham post office, &c		413 24	375 57	199 30	22 50
Dalhousie "		402 80	283 87	21 60	
Fredericton "		430 75	354 38	629 47	25 50
Marysville "		58 35	126 99	9 96	
Moncton "		425 10	270 31	361 40	134 00
Newcastle "		420 76	285 28	168 20	
Richibucto "		50 00			
St. John custom house	22 00	1,977 85	1,814 59	535 75	518 62
" immigration bldg		1,200 00	1,331 73	903 36	61 61
" post office		1,481 35	884 84	2,708 78	709 56
" savings bank		5 85	344 79	113 71	19 38
Tracadie Lazaretto		203 75	1,296 61		
St. Stephen's post office, &c		400 00	188 05	368 10	48 00
Sussex "		245 81	599 45	85 20	
Woodstock "		453 20	294 54	161 25	34 00
Totals, New Brunswick, carried to statement A, page 3	107 85	8,739 33	8,981 69	6,423 75	1,581 67

RT II.—STATEMENT B.—Showing the cost of the following services for each Public Building, &c.—*Continued.*

Name of Building.	Rents.	Salaries of Engineers, &c.	Heating.	Lighting.	Water.	Total.
Quebec.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
mer post office		72 03	143 75	243 20	33 00	491 98
thierville post office		8 45	154 77	37 20	33 00	233 42
kingham " &c.		124 32	286 57	132 45	18 60	561 94
ticook " &c.		406 75	278 73	265 17	40 00	990 65
mmondville " &c.		321 54	177 00	96 96	25 82	621 32
dee custom house			61 25			61 25
nby post office &c.		315 15	197 75	103 69	225 00	841 59
serville " &c.		312 33	278 75	111 47	65 00	767 55
chelaga "		205 84	191 28	143 07	60 14	600 33
l " &c.		150 00	76 51	588 35	261 52	1,076 38
iette " &c.		411 18	263 66	102 60	108 00	888 44
hine "		118 30	258 00	90 00	29 52	495 82
rairie "		58 78	108 08	40 85	40 00	247 71
ssomption post office			212 50			212 50
is immigrant building			25 00			25 00
ntmagny post office		3 96	22 00	46 00	27 00	98 96
ntreal civil service exam. office	200 00					200 00
" custom house		2,337 39	957 92	742 82	319 13	4,357 26
" Dominion public buildings		1,700 04				1,700 04
" drill hall		732 00				732 00
" examining warehouse		3,223 94	2,737 41	1,105 68	513 11	7,580 14
" immigration office	500 00					500 00
" inland revenue office		623 67	336 84	179 92	99 91	1,240 34
" post office	168 16	14,227 96	1,255 64	8,593 48	896 82	25,142 06
" Windsor sta. P.O.D	1,300 00					1,300 00
" sta. B	1,650 00					1,650 90
" P.O. Brch. Metcalf street	250 00					250 00
ibonka immigrant shed		300 00	91 50			391 50
bec citadel buildings	32 50	470 96	1,415 89	64 47		1,983 82
" clerk of works office	60 00	75 00				135 00
" clerk residence	25 00					25 00
" culler's office		540 00	566 36	30		1,106 66
" custom house		622 67	1,146 98	522 89	800 00	3,092 54
" Dominion public buildings P.O.		10 45				10 45
" engineer's offi. exam. warehouse	381 96	1,571 38	1,948 92	101 69	450 00	4,453 95
" immigration office	22 50	36 74	907 97	601 34		1,568 55
" observatory					50 00	50 00
" post office building		1,701 69	1,020 64	801 16	750 00	4,273 49
" Queen's wharf building, marine			1,477 15		750 00	2,227 15
" inland revenue			56			56
hmond post office, &c.		379 97	322 89	225 21	10 42	938 49
ouski public building		160 23	328 29	83 55		572 07
erval immigration shed		335 48	313 00	60 75		709 23
rbroke post office &c.		503 38	490 18	621 93	50 00	1,665 49
el " &c.		506 37	772 16	502 25	250 00	2,030 78
Eustache post office	60 00					60 00
Roch "			47 24	38 15		85 39
Henri "			223 39	108 72	29 28	361 39
Hyacinthe " &c.		548 60	468 02	884 17	150 00	2,050 79
Jérome " &c.		426 70	258 75	182 40	50 00	917 85
John's " &c.		358 51	103 56	315 05	60 00	837 12
ee Rivers custom house		300 00	434 74	112 26	48 60	895 00
" post office		453 60	333 20	174 50	62 00	1,023 30
lleyfield post office	352 50		67 50	42 60		462 60
ctoriaville post office	1 00	134 65	281 52	206 92	50 04	674 13
st Farnham post office		27 32	100 60	118 30	10 00	256 22
Totals, Quebec (carried to statement A, page 5.	5,003 62	34,820 33	21,144 42	18,391 52	6,365 31	85,725 20
Ontario.						
nonte post office, &c.		407 90	199 50	84 05		691 45
herstburg post office, &c.		418 50	301 12	129 05	35 00	883 67
Carried forward		826 40	500 62	213 10	35 00	1,575 12

PART II.—STATEMENT B.—Showing the cost of the following services for each Buildings, &c.—*Continued.*

Name of Building.	Rents.	Salaries of Engineers &c.	Heating.	Lighting.	Water.	T
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	
Brought forward		826 40	500 62	213 10	35 00	1
Ontario—Con.						
Amprior public building		415 90	283 06	194 71	33 19	
Barrie "		430 56	526 30	174 34	50 00	1
Belleville "		670 87	770 89	805 51	85 50	2
Berlin "		439 53	239 29	403 10	13 27	1
Brampton "		411 25	207 82	251 47	32 00	
Brantford "		617 86	203 79	341 13	38 00	1
" examining warehouse			197 73			
Brockville public building		416 22	425 37	767 05	170 00	1
Carleton Place "		310 67	203 75	90 94		
Cayuga "		65 55	108 12	44 13		
Chatham "		551 98	210 33	317 84	42 50	1
Clinton "		48 15	125 30	70 85		
Cobourg post office, &c		423 83	223 30	461 95	23 94	1
Cornwall public building		481 24	320 00	686 05	75 00	1
Deseronto "		472 65	520 80	243 96	39 00	1
Dundas post office	375 00	50 00	69 05	55 00		
Fort William public building			221 25			
Galt "		432 89	236 03	297 39	32 50	
Gananoque custom house			148 37	94 00		
" post office		7 59	97 57	141 00	5 00	
Goderich public building		441 05	399 77	209 84	60 00	1
Guelph "		405 15	339 91	284 81	28 08	1
" post office	145 00					
Hamilton custom house		615 50			18 60	
" exam. warehouse				78 55	33 40	
" drill shed		360 00				
" immigration building					8 55	
" post office		1,319 60	2,005 10	1,801 57	750 00	5
Ingersoll public building		428 40	427 63	292 04	26 21	1
Kingston custom house		221 80	193 95	120 48	61 20	
" exam. warehouse					12 95	
" inland revenue office				72 00	22 59	
" military college		2,760 00				2
" post office		164 75	274 00	1,083 33	48 06	1
" drill hall		200 00				
Lindsay post office		408 50	237 80	83 95	22 50	
London custom house		1,204 03	935 51	756 69	105 00	3
" post office		637 98	980 34	1,354 34	80 00	3
Napanee post office		460 60	277 00	96 40	69 44	
Niagara Falls public building		427 35	195 37	406 25	45 00	1
Orangeville post office		400 00	194 75		20 00	
Orillia "		314 54	181 50	87 10	32 50	
Ottawa bacteriological laboratory			161 00	16 25		
" experimental farm			1,284 88	453 74		1
" geological museum		648 00	689 73	323 94		1
" Major's Hill greenhouse		288 00	392 00			
" national art gallery			91 00	38 00		
" observatory (Cliff st.)				16 00		
" parliamentary and departmental buildings		30,682 73	36,342 69	15,872 70		82
" post office		1,440 00	1,234 81	752 32		3
" printing bureau		10,307 18	11,318 15	825 65		22
" supreme court		948 00	727 18	333 99		2
Ottawa, rented buildings—						
Bank of Ottawa chambers (old balance)	2,000 00					2
Dairy commissioner's office			245 00			
Census building	6,500 00	864 00	805 00	226 50		8
Chief analyst's office			259 03	2 50		
Chief astronomer's office				42 00		
Carried forward	9,020 00	63,020 30	66,031 84	31,284 46	2,118 98	171

NAL PAPER No. 19

I.—STATEMENT B—Showing the cost of the following services for each Public Building, &c.—*Continued.*

Name of Building.	Rents.	Salaries of Engineers, &c.	Heating.	Lighting.	Water.	Total.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	9,020 00	63,020 30	66,031 84	31,284 46	2,118 98	171,475 58
Ontario—Concluded.						
rented buildings—*Con.*						
ms statistical offices	1,500 00	288 00	385 00	207 00		2,380 00
m house (Wood's building, een st.)	1,200 00	576 00	595 00			2,371 00
bition commissioner's offices	500 00		112 00	37 00		649 00
ch translator's offices	465 00		122 75	497 51		1,085 26
nspector's office				10 56		10 56
gical museum annex	600 00			19 56		619 56
rial building (agriculture and migration)	4,200 00			226 50		4,426 50
ur department	1,200 00			113 00		1,313 00
evin block (Howell estate)	5 00					5 00
ia department, (Wood's build-, Slater st)	5,520 00	600 00	987 24	445 00		7,552 24
ne stores			152 00			152 00
. M. Police stores	855 00		28 00	84 00		967 00
s' chambers (various dept's.)	1,347 00			42 00		1,389 00
eyor General's offices	2,250 00	288 00	533 67	252 01		3,323 68
c works dept., workshops, &c.	1,470 00	288 00	819 35	654 60		3,231 95
lic building		410 75	223 00	146 04	63 60	843 39
e post office		431 85	209 57	249 60	28 00	919 02
' custom house		305 35	203 96	75 30	50 00	634 61
post office		315 45	273 65	231 50	75 00	895 60
"		416 10	290 63	35 77	34 76	777 26
"		444 65	234 00	120 07	29 50	828 22
ur "		328 25	249 80	164 70		742 75
orne "		277 20		138 10	7 50	422 80
e "		418 15	238 00	449 30	8 83	1,114 28
custom house		1 85	441 50			443 35
ost office		411 80	237 75	193 44	120 00	962 99
ge public building		409 50	606 00	276 09	70 76	1,362 35
"		347 01	422 36	29 38		798 75
alls post office		308 10	177 25	132 76	66 57	684 68
public building		678 95	238 90	291 04	63 50	1,272 39
"		431 10	348 67	216 12	3 60	999 49
rines "		429 16	255 40	266 60	48 65	999 81
as "		438 93	356 50	568 45	52 28	1,416 16
ivil service exam. office	142 00					142 00
ustom house		1,529 59	615 86	241 02	55 88	2,442 35
ominion public building		1,290 00				1,290 00
rill shed		991 13				991 13
xamining warehouse		4,698 54	1,021 86	287 82	76 17	6,084 39
. inspector's office	337 50					337 50
land revenue office		663 90	363 10	175 88	32 02	1,234 90
a. B. post office	750 00					750 00
ost office		4,696 42	1,687 57	6,183 62	542 60	13,110 21
" stables	132 00					132 00
st. rec. gen		366 00	28 00	62 72		456 72
gineers office	710 00			12 00		722 00
ost office		459 50	197 50	153 48	75 00	885 48
n "		406 30	294 60	201 15	31 00	933 05
public building		819 00	515 75	824 75	96 00	2,255 50
rmoury		400 00				400 00
k "		459 32	327 75	311 86	38 20	1,137 13
als, Ontario, carried to State-ent A, page 7	32,203 50	88,644 15	79,825 78	45,911 76	3,788 40	250,373 59
Manitoba.						
xperimental farm			380 69			380 69
ost office, &c		623 65	945 08	909 05	127 00	2,604 78
arried forward		623 65	1,325 77	909 05	127 00	2,985 47

PART II.—STATEMENT B.—Showing the cost of the following services for each Building, &c.—*Continued.*

Name of Building.	Rents.	Salaries of Engineers &c.	Heating.	Lighting.	Water.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward		623 65	1,325 77	909 25	127 00
Manitoba—Concluded.					
East Selkirk immigrant building	5 00		744 00		
Dauphin immigrant building			97 50		
Minnedosa Dominion land office	735 00		139 75		
Portage La Prairie post office		404 90	711 15	282 30	
Winnipeg clerk of works	50 00				
" custom house		345 50	929 90	167 38	58 16
" Dominion lands office			338 17	35 13	65 67
" engineer's office	424 50				
" examining warehouse			533 62	89 40	28 03
" immigrant shed			1,512 90	709 50	792 59
" post office		2,896 22	3,017 21	3,792 69	738 25
" immigrant hospital				181 85	64 28
" weights and measures off	480 00				
Totals, Manitoba, carried to Statement A, page 7	1,694 50	4,270 27	9,349 97	6,167 30	1,873 98
North-west Territories.					
Alameda Dominion lands	195 00		17 59		
Calgary court house, &c		500 90	273 65	113 40	255 00
" engineer's	140 00				
" Dominion lands office			6 50		
" immigrant building	1 00		256 84		
" land and registry office		3 60	76 50		
" post office		595 25	1,402 67	956 25	340 00
Carnduff court house		413 73	67 50	1 86	
Didsbury, immigrants building	80 00				
Edmonton, court house	450 00	682 90		60 02	
" Dom. lands & registry office		407 50	93 30	3 50	
" immigrant shed	450 00		304 75		
" post office	27 00	5 80		300 55	
Indian Head experimental farm			475 00		
Grenfell, immigrant building	48 00				
Leduc, immigrant hall	90 00				
Lethbridge court house & custom house		4 70	165 50	1 75	
" immigration building			71 50	42 49	
" post office	18 00	523 35	10 00	161 72	36 00
Lacombe, immigration building	117 00		25 00		
Lamerton, immigrant building	80 00				
Macleod custom house			20 00		
" immigrant hall	130 00				
" court house	225 00	175 00	122 15		
Medicine Hat, court house		540 00	23 25	27 77	11 07
Maple Creek, court house	10 00				
Moose Jaw, "		408 95	246 95	5 20	
Moosomin "		603 50	488 29	16 33	
Prince Albert, Dom. lands & reg. office		410 85	285 00	17 61	
" immigrant shed	40 00		74 25		
Qu'Appelle, court house			5 00		
Red Deer Dominion lands office	72 00				
" immigrant shed	180 00		34 00		
Regina, court house		1,050 25	870 00	228 66	
" Dominion lands & reg. office		563 50	674 00	280 72	
" immigrant building	1 00		152 50		
" post office		13 50	201 44	48 24	
Rosthern, immigrant shed			146 30		
" lands office	120 00				
Carried forward	2,474 00	6,903 28	6,589 43	2,266 07	642 07

ONAL PAPER No. 19

II.—STATEMENT B.—Showing the cost of the following service for each Public Building, &c.—*Continued.*

Name of Building.	Rents.	Salaries of Engineers, &c.	Heating.	Lighting.	Water.	Total.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	2,474 00	6,903 28	6,589 43	2,266 07	642 07	18,874 85
h-west Territories—Concluded.						
oon, court house	6 00					6 00
oon, immigrant building		13 24	792 90			806 14
ona immigrant shed	216 00		613 92			829 92
, immigrant building	77 00					77 00
kiwin, immigrant building	100 00					100 00
court house	45 00					45 00
ey, court house		26 35	327 75	32 54		386 64
lands office		540 00				540 00
n, court house		41 66	9 59			51 25
n, immigrant building	315 00		440 86			755 86
Totals, North-west Terri.; carried to statement A, page 8	3,233 00	7,524 53	8,774 45	2,298 61	642 07	22,472 66
British Columbia.						
z experimental farm			78 77			78 77
post office		152 25	90 00	67 50		309 75
ps public building		610 70	586 71	95 45		1,292 86
drill hall			80 00			80 00
no post office		600 00	70 00	243 00	36 00	949 00
public building		657 75	290 60	623 70	45 00	1,617 05
alt, custom house			14 52			14 52
Vestminster, post office		616 65	94 96	663 64	31 02	1,406 27
d public building		807 52	497 90	353 55	73 32	1,732 29
ver drill hall			610 67			610 67
examining warehouse	1,800 00	540 00	4 26	35 96		2,380 22
post office		1,293 20	438 28	1,273 10	75 16	3,079 83
custom house				540 67		540 67
a examining warehouse			10 00			10 00
barracks			49 55			49 55
drill hall			41 15			41 15
indian office		604 15	177 05	88 14	17 50	886 84
military store			239 73			239 73
post office		2,913 70	633 03	1,465 26	46 40	5,058 39
old post office					95 00	95 00
public works	84 00					84 00
n's Head quarantine station	60 00		3,129 55	40 00		3,229 55
Columbia generally		37 17				37 17
Totals, British Columbia carried to Statement A page 9	1,944 00	8,833 09	7,136 73	5,490 06	419 40	23,823 28
on buildings generally			1,468 34			1,468 34
Totals	16,905 87	119,921 04	88,031 41	75,017 52	16,008 72	315,884 56

PART II.—STATEMENT C.—Showing amounts loaned by Government under the a
rity of special Acts of Parliament and upon the recommendation of the Ho
Minister of Public Works, during the Fiscal Year 1903-4.

To whom loaned.	Parliamentary authority.	Purpose.	Amou
Harbour Commissioners of Montreal	Acts 59 Vict., ch. 10 and 61 Vict., ch. 47	General work of improvement to harbour	$ 600,
Harbour Commissioners of Montreal	Act 1, Ed. VII, ch. 9	Construction of a steel grain elevator	300,
	Total		$900,

DEPARTMENT OF PUBLIC WORKS,
ACCOUNTANT'S OFFICE,
OTTAWA, Dec. 22, 1904.

A. G. KINGSTON,
Account

PART III

REPORT

ON

PUBLIC BUILDINGS THROUGHOUT THE DOMINION

FOR THE FISCAL YEAR ENDED JUNE 30, 1904.

BY THE

CHIEF ARCHITECT

PUBLIC WORKS, CANADA,
CHIEF ARCHITECT'S OFFICE,
OTTAWA, December, 7, 1904.

ÉLINAS, Esq.,
Department of Public Works.

SIR,—I am sending you herewith, annual report of works executed under this
ch during the year ended June 30, 1904.

D. EWART,
Chief Architect.

PROVINCE OF NOVA SCOTIA.

HALIFAX.

APPRAISER'S OFFICES.

A new partition was erected, some glazing done and repairs made to plumbing
r the supervision of C. E. W. Dodwell, resident engineer and inspector of build-
Nova Scotia Halifax.

CUSTOM HOUSE.

This building which was described in a previous report has been carried on con-
usly during the fiscal year and is still in progress.

DOMINION BUILDING.

A quantity of new furniture, including cabinets for railway mail service, chart
&c., for Marine and Fisheries office were supplied as well as the necessary
ic lamps, &c. Repairs were effected to heating, plumbing, lighting, mail hoist,
gs, roof, woodwork, painting, glazing, lock boxes, locks and furniture.
Work supervised by C. E. W. Dodwell, resident engineer and inspector of public
ings, Halifax, N.S.

IMMIGRATION BUILDING.

Some repairs, additional to those reported last year, were effected to partitions,
wiring, furniture, &c., under the supervision of C. E. W. Dodwell, resident
neer and inspector of public buildings, Halifax, N. S.

LAWLOR'S ISLAND.

QUARANTINE STATION.

Extensive repairs were made to the engines and boiler of the steamer 'Argus.'
The foundation walls of the hospital and of the storehouse near the steward's
ence were rebuilt; the large 3rd class detention building was partitioned into

thirty-two cubicles ; the other and nearby 3rd class detention building was sh round the foundation posts ; the back half of the storehouse was floored in c and lined with wood ; two rooms in the hospital for saloon passengers were lined and finished and repairs were made to chimney and roof.

Work done under the supervision of C. E. W. Dodwell, resident enginee inspector of public buildings, Halifax, N.S.

SYDNEY.

DOMINION BUILDING.

Addition to Main Building.

This is an addition of 30 feet in length by 40 feet in breadth on Dorc street elevation with which it is continuous and similar in detail, number of s and constructive material. The basement will be excavated and continuous wi original basement ; the ground floor will add 20 feet of its length to the post the remaining portion being divided up into a front vestibule, a brick safe, a la room and a mail entrance ; on the first floor will be two rooms, two brick while in the attic will be four rooms.

Plans, &c., prepared by this department.

Clerk of works, Duncan A. Gillis.

Contractors, Rhodes & Curry.

PROVINCE OF NEW BRUNSWICK.

FREDERICTON.

PUBLIC BUILDING.

A fire extinguishing apparatus consisting of hydrants and hose on all attached to a standpipe connected to main on street was installed. New eaves tr were supplied and fixed to back porch ; some painting was done in caretaker's ters and minor repairs were affected to roof, plumbing, doors, &c.

Work supervised by D. H. Waterbury, of this department, St. John, N.B.

MILITARY STABLES.

On July 9, 1903, a contract was entered into for the construction of this bui which is of wood, 20 feet by 44 feet, one and a half story on a pile foundation. roof and external surface of the walls are covered with steel shingles. On the g floor are a carriage room, a loose box, a harness room, a loose box, and three and on the upper floor, a hay-loft and a grain store.

Plans, &c., prepared by this department.

Clerk of works, H. M. Clarke.

Contractor, C. J. B. Simmons.

SERGEANT-MAJOR'S QUARTERS.

On August 3, 1903, a contract was entered into for the construction of this l ing which is one and a half story of wood, 33 feet 8 inches by 16 feet 8 inches stone foundation, having a one story adjunct 19 feet 2 inches by 10 feet 10 in

ear, on a stone foundation. There is a cellar under the main portion ; the ground r has two rooms as well as a hall and vestibule in the main portion and a kitchen pantry in the adjunct; the first floor has three bedrooms, a bathroom and a sage.

Plans, &c., prepared by this department.

Clerk of works, H. M. Clarke.

Contractor, C. J. B. Simmons.

This building is completed.

MARYSVILLE.

POST OFFICE.

Owing to the flooding of basement from a broken sewer on adjacent property, a 3-inch plank drain 65 feet in length was laid, the earth about the buildings down ne footings excavated ; the walls to ground level covered with a cement concrete ng 6 inches thick and the trench about building filled in. The old sewer was oved and the basement thoroughly cleaned.

Work done under the supervision of D. H. Waterbury, of this department, St. n, N.B.

PARTRIDGE ISLAND.

QUARANTINE STATION.

Building 'A,' the Hospital.—An addition was made at western end to serve as rnace-room and coal store and a hot-water heating system installed. The water ice was repaired and partly renovated.

Building 'B,' Detention House.—A drain was laid and the furnace, range and nbing were repaired.

Building 'C,' Detention House.—The W.C.'s in the lavatory rooms were removed cement latrines constructed. The iron smoke pipes of heating furnaces were oved and brick flues in basement substituted therefor. Some grading was done the drainage improved. New roller window blinds were provided.

Steward's House.—A stove was supplied and some minor general repairs effected.

Building 'E,' Doctor's House.—The roof of wing was covered with composition ; ral rooms had ceilings whitened as well as papering and painting done and some or repairs effected.

Work supervised by D. H. Waterbury, of this department, St. John, N.B.

RICHIBUCTO.

PUBLIC BUILDING.

his building was described in my report of last year ; meanwhile it has been shed, fitted up and furnished and is heated by a hot-water system.

Plans, &c., prepared by this department.

Clerk of works, Cyrille Comeau.

Contractor for the construction of the building, James Reid.

Contractor for heating system, Frank Powers.

SUSSEX.

PUBLIC BUILDING.

The shingling of roof was removed and a galvanized iron covering substituted ; a tion of the foundation wall was rebuilt ; the brickwork and masonry was re-

pointed; stand-pipes, hydrants, hose, &c., were put in for all floors to afford prot from fire; a complete plumbing and drainage system with fixtures, such as lavatory basins, sink, bath, boilers, &c., was installed, the walls, ceilings and work were cleaned, tinted, painted and varnished, and repairs were made to floor, work, back stoop and outside steps.

Work done under the supervision of D. H. Waterbury, of this departme John, N.B.

ST. JOHN.

CUSTOM HOUSE.

The retaining wall which had caved in last autumn, was restored in cemen crete. The entire front elevation and the south end of the building had the ston pointed; some of the stone cornice corbels which had fallen were restored. A v partition was built to inclose the lower basement hall alcove and provide st The time ball apparatus was overhauled, repaired and improved throughout. A cap was placed on brick pier of transit in observatory; the lifting rigging hatch was renewed and two special chairs were supplied the observatory. The of the Customs Department was overhauled and put in good working order. five lavatory rooms were cleaned, kalsomined and tinted, and the woodwork varn Two offices on first floor were painted,the ceilings whitened and a cabinet varni two on ground floor were kalsomined, the ceilings whitened and a cabinet varni shelves and a shelf counter were built in express-room; sundry repairs were m woodwork, plumbing, copper roofing and electric bells.

Work supervised by D. H. Waterbury, of this department, St. John, N.B.

POST OFFICE.

On the letter carriers' flat the partitions were removed and the apartments i into one room, all the walls and ceilings therein were made good, the heatin and electric wiring were rearranged and improved and 60 feet lineal of tables su The Princess street entrance door was taken off and replaced by a new one, a pairs were done to some doors and woodwork. A new urinal and tank was su and connected on second floor,and some repairs were done to the plumbing and e bell services. An electric clock was set up in the lobby and conectend with the r tor clock at the observatory. New rubber stamping pads were supplied. The el was overhauled and put in order and the elevator well bricked up. Repairs were to copper roof covering and troughs, ironmongery of doors and windows, fur and fittings. Two windows were fitted with luxfer prisms to improve the li in basement.

Work supervised by D. H. Waterbury, of this department, St. John, N.B.

SAVINGS BANK.

A bracketed shelf was put up in public lobby for use as a writing desk; son tubing was supplied for vault lights, and repairs were made to floor of banking to the asphalt covering of area and to the plumbing. The boiler room was lime ened, the ceilings of same rooms and halls were whitened. the walls painted an radiators bronzed.

Work supervised by D. H. Waterbury, of this department, St. John, N.B.

ST. JOHN.

IMMIGRATION BUILDING.

rtion of this building was damaged by a fire which caught from the burning warehouse, and the making good involved repairs and renovation of roof, cor-dows, wall covering, doors and furniture. Alterations of the position of par-ere made in several places, and a number of new partitions, partly glazed, were n first floor. At the south western end of building a new porch containing and stairway was built having walls, doors, windows, floors similar to those ilding. The end lavatory rooms were transformed into a furnace room to he boilers for heating the large shed near by. Improvements were made in oiler-room to render it completely water-tight. Fire hose was supplied and ade to cooking range and furniture. A coal shed was built under the broad the new shed.

lone under the supervision of D. H. Waterbury, of this department, St. John,

ST. JOHN, NORTH (PORTLAND).

POST OFFICE BUILDING.

February 15, 1904, the building was sold by the government to Dr. J. E.

ST. JOHN WEST (CARLETON).

POST OFFICE.

brickwork was pointed, the slate roof repaired and in part renewed; the wood-ors, plumbing and waste pipes and glazing were repaired; the cupola was nd the front doors varnished.

k supervised by D. H. Waterbury, of this department, St. John, N.B.

PROVINCE OF PRINCE EDWARD ISLAND.

CHARLOTTETOWN.

DOMINION BUILDING.

rrangement and alteration of ground floor.

nges are in progress for the enlargement of the postal accommodation. The a of the post office is being increased in width nine feet, and that of the Sav-nk decreased. The original brick division wall between the savings bank and office is to be removed, and be replaced by brick piers which are to carry iron pporting the brick division wall on first floor. The partition between the l post office will have glazed doors and borrowed lights. The additions to the e fittings will comprise an entire new box screen, money and registered letter l fittings, opening table, parcel post stand, two public desks and stamp ven-ce. The w.c's. in rear will be removed and placed under the landing of main . A door is to be broken through outer wall of room originally occupied as loor w.c., for use as a mail entrance. Change in position of a number of

heating radiators and lavatory basins is necessary owing to the general sche attraction as also changes in basement walls, &c., &c.

Plans prepared by this department. Clerk of works, John Harper.

Caretaker, H. & S. Lowe.

PROVINCE OF QUEBEC.

ACTONVALE.

POST OFFICE BUILDING.

On June 28, 1904, a contract was entered into for the construction of this ing fronting on Main street. It is to be two and one half stories of brick on a basement supported on a pile foundation and measuring 43 feet 9 inches by 3 10½ inches; the partitions, roofs and floors are wood, excepting the basemen which is concrete. The basement is to contain heating apparatus, fuel and on the ground floor is to be the post office, stairway hall and entrances, and upper floor are to be seven living rooms exclusive of a kitchen and a bath-room

Plans, &c., prepared by department.

Contractor, Joseph Bourque.

GROSSE ILE.

QUARANTINE STATION.

A large number of the fences were coated with coal-tar composition.

HEALTH DIVISION.

There are in progress and nearing completion two buildings as follows :—

Works offices.—A wooden building on a concrete foundation, 28 feet by 3 two stories and basement, the deck roof covered with galvanized iron. The c walls and partitions of the rooms are to be plastered, and those of the halls a sages sheathed with wood. There is to be a one story wing also of wood, 15 f 12 feet. Heating is to be by hot air and there is to be water service, plumbi drainage.

Kitchens.—These are eight divisions of a wooden one story building on posts, 150 feet 9 inches long by 15 feet 9 inches broad, having galvanized iro covering. There are to be four brick chimneys of two flues each. A water s sink and drainage to each kitchen. The original detached kitchens were resl and generally repaired. The steamer 'Challenger' was repaired and repainte

Work supervised by Ph. Béland, clerk of works, Quebec, P.Q.

LEVIS.

CATTLE QUARANTINE.

The pump and vehicle buildings were repaired; the employees' building h trimmings to doors, windows, gallery, stairs and wainscotting, as also general throughout ; several of the sheds had new stone piers ; 4 pumps with pipin connected to wells; a stove for heating water was supplied, and a clock for of the night watch.

Work supervised by Ph. Béland, clerk of works, Quebec, P.Q.

MONTREAL.

CUSTOM HOUSE.

Glazed partitions were erected in long room and in gauger's room ; a hardwood or was laid in gauger's room ; electric light was installed in several additional ices ; iron mats were supplied at entrances ; a new wash basin was fitted up ; ne furniture was supplied and repairs made to roof, plumbing, glazing and paint- g.

Work done under the supervision of C. Desjardins, clerk of works Montreal, P.Q.

EXAMINING WAREHOUSE.

On March 28, 1904, a contract was entered into for the construction of six freight vators in place of the original freight elevators which were too small and other- se unsuitable. Changes were made in plan necessitated by removal of the dry goods, rdware, groceries and cigar departments to third floor. Glazed partitions, hardwood ors, counters, iron screens and other fittings and furniture were provided for the rious departments, on the first floor which was completely cleaned and had the ickwork repaired and whitewashed and the woodwork repainted or oiled. The second or is about to be treated similarly. An electric lighting system was installed roughout the building. New lavatories have been fitted up with closets, lavatory sins and sinks ; the iron fence was repaired and painted and the roof and gutters paired.

Work done under the supervision of C. Desjardins, clerk of works Montreal, P.Q.

INLAND REVENUE BUILDING.

The interior of the building was repaired, cleaned, tinted and painted. An auto- atic water filter was fitted in the water supply main at its entrance to the building. new bath and a lavatory basin were fitted up for the caretaker ; some new heating ils were added ; some new partitions, counters, shelving, &c., were erected and e floors of some of the passages laid in hardwood. Repairs were effected to water rvice and roof.

Work supervised by C. Desjardins, clerk of works, Montreal P.Q.

POST OFFICE.

A system for heating water for cleaining purposes was fitted up ; some new ils were added to the heating system ; new electric lights were added to the light- g system ; hardwood and glazed partitions were erected ; one office floor was laid id in hardwood; brass standards were placed outside the registry wickets; the ground or and basement rooms were cleaned, tinted and painted, some rooms on first or cleaned, tinted, papered and decorated. New combination locks were supplied money order vaults. Repairs were effected to money order vault, heating system, umbing, lighting, drainage and roof. The hardwood throughout ground floor was varnished and some carpets and furniture supplied.

Work supervised by C. Desjardins, clerk of works, Montreal P.Q.

QUEBEC.

HIS EXCELLENCY'S RESIDENCE, CITADEL.

Repairs were effected to plumbing, bells and lighting, some of the woodwork was epainted and the interior of the building cleaned and put in order for the annual isit of Their Excellencies.

Work supervised by Ph. Béland, clerk of works, Quebec, P.Q.

CUSTOM HOUSE.

Some shelving and sets of drawers were furnished, and repairs were effect plumbing, furniture, bells, clocks, &c.

Work supervised by Ph. Béland, clerk of works, Quebec, P.Q.

EXAMINING WAREHOUSE.

The flooring on the first floor was relaid; part of the drainage system was vated; the elevator engine was inclosed by a glazed wooden partition; a new and a tiled floor in toilet room were put in for Harbour Commissioners; a batl a skylight were put in the caretaker's apartments, and all the rooms thereof painted. The halls of ground floor were painted and repapered and the appra rooms recarpeted.

Work supervised by Ph. Béland, clerk of works, Quebec, P.Q.

IRON FOUNDRY.

The ground was graded and levelled; the cupola was enlarged; piping put in a steam-heating plant was fitted up, and a toilet room with w.c. basin and tiled was made.

Work supervised by Ph. Béland, clerk of works, Quebec, P.Q.

IMMIGRATION BUILDING, LOUISE EMBANKMENT.

An additional three rooms were built and a porch as well; new chimney were set; the roof was repaired; additions were made to plumbing services and d age; the well was cleaned and the pipes thereto renewed; repairs were made to el lights, pump, stove and hot water piping, and some furniture and carpets suppl officers and matron.

Work supervised by Ph. Béland, clerk of works, Quebec, P.Q.

POST OFFICE.

Two offices and one hall on first floor were refloored in hardwood and one of offices was replastered. Electric lighting was installed on first and second floors. basement rooms throughout were painted and papered. Alterations and renewals made in the original electric wiring and fixtures and repairs made to glazing, &

Work supervised by Ph. Béland, clerk of works, Quebec, P.Q.

TELEGRAPH OFFICE.

Two hundred and eighty boxes were supplied.

ST. HYACINTHE.

INLAND REVENUE BUILDING.

On July 30, 1903, a contract for the construction of this building which is ated on the corner of Girouard and St. Dominique streets, on a plot of ground h frontages of 85 feet 8 inches and 106 feet 11 inches, respectively, adjoining and of the post office plot. The building measures 48 feet by 48 feet, and consists o stories besides a basement, a sub-basement and an attic story. A tower 12 feet s with two additional upper stories contains the main entrance in the middle o Girouard street frontage. The sub-basement occupies 20 feet in depth by th breadth of the rear of the building and consists of a furnace-room, a fuel-room

ay hall. The four succeeding flats have each a stairway hall 8 feet wide, running front tower to rear of building ; the basement has in addition two large rooms, room and a brick vault ; the ground floor, one room, 17 feet 6 inches by 36 feet, ach, 17 feet 9 inches by 17 feet 6 inches, two brick vaults and entrance porch ; st floor, 4 rooms 17 feet 9 inches by 17 feet 6 inches, a brick vault and a small in tower and the attic 5 rooms, as well as bath-room and a w.c. room. The are of stone; the partitions in sub-basement, the walls of tower inside building e vaults are of brick ; and the remaining partitions, the floors, excepting in base- where it is concrete, as well as the roof are of wood ; the roof and dormers are d with metal.

lans and specifications prepared by this department.

lerk of works, John Arbour.

ontractor, Paquet & Godbout.

THETFORD MINES.

PURLIC BUILDING.

n August 8, 1903, a contract was entered into for the construction of this build- lot No. 314, which has a frontage of 50 feet on Notre Dame street.

he building consists of a main portion 29 feet by 29 feet having basement, l floor, first floor and attic. An adjunct in rear 32 feet 6 inches by 23 feet, hav- ound floor, first floor and basement, also an adjunct on the right side, one story asement 15 feet 6 inches by 52 feet. The main portion, on the right side, ises a basement, a ground floor for the post office and the upper floors for the ns offices and caretaker's quarters. The adjunct is for examining warehouse, ns offices, stairway to first floor and w.c. room. The walls of the basement are and those of the remaining stores brick ; the partitions, floors and roofs are the deck of the main portion being covered with tar and gravel.

lans, &c., prepared by this department.

lerk of works, Ant. Grégoire.

ontractors, Dussault & Pageau.

VALLEYFIELD.

PUBLIC BUILDING.

n September 14, 1903, a contract was entered into for the construction of this ng on a plot of ground on the south side of Victoria street, extending back to ecile street and having a lane on western side. There is a main portion 60 feet y 64 feet frontage, three stories and basement and an adjunct in rear, 67 feet y 28 feet broad, one story and basement. On the north-west angle of the main ng is a tower, two additional stories in height. The ground floor of the main n contains the main stairway, passage to adjunct, light shaft, brick vault and a ffice 54 feet by 43 feet, lighted on three sides, and having an entrance on both nt and rear. In the adjunct are the examining warehouse, the gas inspector's the weights and measures office and the w.c.'s. On the first floor are the cus- nd inland revenue offices and a brick vault for the customs long-room, and in cond floor are eight rooms and bath-room for caretaker's quarters. Opening on airway between the ground and first floor is a mezzanine for w.c. and lavatory- The basement is for fuel and furnace-rooms. The walls of the basement and l floor are stone, and of the remaining floors brick ; the partitions, floors, and re of wood ; the cornices and coping are metal covered and the roof is covered ar and gravel.

ans, &c., prepared by this department.

erk of works, Edmond Lemay.

ontractor. Théodore Bélanger.

PROVINCE OF ONTARIO.

ALEXANDRIA.

POST OFFICE BUILDING.

A site for this building was obtained on the corner of Catherine and Main with frontages of 65 feet and 42 feet respectively, and, on October 23, 1903, a co was entered into for the construction of the building thereon. It is two sto brick on a stone basement with a wooden attic and having a portion at the an the streets, 12 feet by 12 feet carried up two additional stories in brick covered pyramidal roof. The basement will contain the heating apparatus, fuel and the ground floor, the post office and examining warehouse ; the first floor three and a bathroom and the attic three rooms.

Plans, &c., prepared by this department.

Clerk of works, John R. Chisholm.

Contractor, Jos. Bourque.

BOWMANVILLE.

PUBLIC BUILDING.

A site on the corner of Temperance and King streets, with frontages of and 66 feet respectively, was obtained and on November 2, 1903, a contract for t struction of the building was entered into. There is a main portion 64 feet by exclusive of projections, two stories basement and attic, a portion of which 12 12 feet is carried up two stories higher and covered with a pyramidal roof, and story and basement adjunct 15 feet by 32 feet. The external walls are of bric stone basement, the roofs, floors and partitions wood. There is a brick safe ground floor and one on the first floor. The ground floor of the main building the post office and that of the adjunct for the examining warehouse and w.c.'s ; first floor are five offices, a brick vault and a w.c. room; the attic, six rooms bathroom for the caretaker, and the basement is for heating apparatus, fuel an age.

Plans, &c., prepared by this department.

Clerk of works, Ferdinand B. Whiting.

Contractor, Wm. Stuart.

BRANTFORD.

DRILL HALL.

On June 9, 1904, a contract was entered into for alterations and additions building.

The additions comprise a two-story and basement strip extending acros street front ; an octagonal, three story and basement, tower on the corner of Pa River fronts; an additional story on leanto on river front and a small two stor tion on Elizabeth street, to the caretaker's quarters. With these additions an alterations the structure will contain as follows, viz. :—a basement under the park age for a shooting gallery, a stairway and a lavatory ; under the river front f nace and fuel rooms and under the caretaker's quarters for store-rooms; on the floor besides the drill hall which is 166 feet by 78 feet, there are a band-room, q master's stores, quarter master's office, eight armouries, an orderly room, a con ing officer's room and six rooms for caretaker. On the first floor a lecture room geants room, four officers rooms, a recreation room and lavatories.

Plans, &c., prepared by this department.

Clerk of works. L. H. Taylor, architect.

Contractor. Schultz Bros. Co.

COBOURG.

ARMOURY AND GUN SHED.

A contract was entered into on February 24, 1904, for the construction on a plot ground having frontages on Spring, Albert and King streets, the front of the build- to be on King street. The building is to be two stories in height, 112 feet in depth clusive of a stairway lobby in the rear and an entrance porch in front by 74 feet in eadth excepting the front portion on King street which is 110 feet by 28 feet in pth. There are to be two stories of brick on a stone foundation, only a portion of ich is to be excavated. The excavated portion will consist of a shooting alley ex- ding throughout the entire front by a depth of 22 feet having in its rear a staircase l, beyond which is to be a furnace and fuel room. The ground floor will comprise field battery gun shed 83 feet by 35 feet, the garrison artillery gun shed 46 feet by feet, five harness rooms, one armoury, two story rooms, three vestibules and three ircase halls. The second floor will have a recreation hall, two mess rooms, two com- nding officers' rooms, two officers' rooms, two armouries, a quartermaster's room, two atory rooms and six rooms for the caretaker's residence. The partitions through- and the covering of the skylights are to be galvanized iron; the floors and roof are be wood ; the roof to be covered with tar and gravel.

Plans, &c., prepared by this department.

Resident architect, C. Carruthers.

Contractor, David S. Booth.

OTTAWA.

CENTRAL EXPERIMENTAL FARM.

Fifteen wire screens and 22 fly screens were furnished for the windows of the oratory, and repairs were made to 18 chairs. The director's dwelling and those of ther officers had the interiors cleaned, painted, papered and tinted. The walls of servatory and the plastering in 10 of the officers' dwellings were repaired.

Electric lighting was installed throughout the farm buildings and officers' resi- ces.

The farm foreman's residence, a building which was on the farm at the time of rchase by the government, was overhauled and put in thorough repair. A cellar s excavated, the building was raised, a concrete foundation built thereunder and ot water heating system installed.

Some additions, alterations and repairs were effected in connection with the mbing and heating of the various buildings, and a quantity of wire fencing was up.

Work done under the supervision of this department.

CENSUS OFFICES, SPARKS AND O'CONNOR STREETS.

This is a rented building. Four electire fans were installed, two on ground and on first floor and minor necessary repairs effected.

EASTERN BLOCK.

New hardwood floors were laid in the attic rooms and corridors of the Depart- nt of Indian Affairs as well as in four rooms of the Auditor General's offices ; the lls and wood work of five rooms of the Auditor General's offices were cleaned and nted ; the attic rooms and corridors of the Indian Affairs offices were cleaned, ted and painted as also were nine rooms for the finance, three for the Privy Coun- and five for His Excellency the Governor General. New sashes and frames were put the rooms of the Indian Affairs in attic, and lights of glass were reglazed through-

out the building ; articles of furniture were supplied the various departments as rods and curtains, shelving, drawers and cushions, while articles of fu were repaired. A number of steel fittings were supplied to the Auditor G Department. Additional electric lights, &c., were installed such as p desk lights, drop light shades, new lavatory basins and sinks, we up and connected, and branch services from main to existing basins. heating coils were fitted up, also electric fans and electric bell services put in. were minor jobs such as lettering, painting, &c., and joinery. The double w and summer blinds were taken off, stored, cleaned and put on periodically a roofs, footpaths and roads kept free from snow during winter.

Work done under the supervision of this department.

Mechanical engineer, Wm. King.

Clerk of works, F. Breton.

GOVERNMENT HOUSE.

On the morning of April 3, 1904, a fire broke out in the ground floor of t wing of the hall resulting in the destruction of a part of the interior of the wi of a part of the interior of the main house as well, also causing damage to fixtures, furniture, &c., both directly and by water. The damage to the buildi immediately repaired ; a new skylight was built over the w.c.'s, and, a new roof over the wing. The galvanized iron coverings of copings were renewe the fireplaces had fire brick linings substituted for those of tile and the hearths ened, and the lincrusta dado destroyed by fire was replaced in wood. A large q of new plastering, flooring, wood finishings, fixtures, painting, &c., as well electric wiring throughout the new wing were necessitated by the fire. In th house the cock loft was floored the inside of the roof lathed with metal and pl with asbestic, a brick firewall with iron door put in and a fire escape fitted on of wall—all as a protection against fire.

Additions were made to the system of drainage, which was referred to year's report, inclusive of 971 feet of 6 inch and 9 inch tile drains serving th shops, stable and dairy, together with cedar curbs, cast iron grates, &c.

The stage in the ball room had the gas piping removed and electric installed, new scenery was prepared and a temporary stepped floor laid thro the ball room to fit it for use as an auditorium. A portion of the plastering room and of tennis court was renewed. New screen doors were hung at entr cloak room, a book case, four stepladders and 85 packing cases of various si uses were supplied. A new plate warming cabinet was supplied to the kitchen some parts of the ranges, fireplaces, &c., were renovated and cleaned. A woode to 24 feet by 13 feet, for the storage of farming implements, was built at the the small greenhouse. Two old lean-tos at gardener's house were pulled down shed straightened, underpinned and enlarged by an addition 30 feet by 12 fe roofs of old and new portions shingled and the walls clapboarded.

The cottage was cleaned throughout and a number of rooms papered, diste and painted, including all the rooms in basement, which also had the wo painted. The verandah was repaired and painted and some carpet, a table number of chairs supplied.

The toboggan slides were pulled down, being unsafe, and a new slide 300 47 ft. and 6 ft. wide, with all the necessary stairs, landing, rails, &c., was cons on the original site.

At the hall there were 1,875 yards of painting, 955 yards of cleaning and done, and 567 sup. ft. of broken glass renewed, exclusive of that done to the d portions of the house.

A quantity of china, earthenware, glass and napery, was supplied to m deficiencies and the kitchen coppers were retinned.

e boat-house and float as well as the road thereto were kept in repair—157 ft. plank sidewalk and crossings were laid as well as all the existing walks kept in epair; 327 ft. of close board fence 12 ft. high was built; 5 gates were renewed pairs made to wooden and wire fences throughout. A wire netting 200 ft. long t up along the flower borders adjoining the tennis lawn. Hot-bed sashes were d and the conservatories repaired and painted.

e two large lower lawns were regraded with additional soil and resodded. Fruit bulbs, seeds, plants, gardening tools and other necessaries were supplied for and flower gardens.

e conservatories were kept in order, the lawns, drives, &c., rolled and otherwise nded. The ice-house was stored with ice. The roofs, paths, slides, rinks, &c., eared of snow by the departmental staff, by whom the grounds, lawns, gardens nt houses were maintained.

e usual periodic cleaning, packing and unpacking were done ; arrangements l attendance on entertainments were furnished, and the rinks, slides, &c., kept r.

orks done under the superintendance of Wm. Hutcheson, clerk of works.

LANGEVIN BLOCK.

vo hundred and twenty-five yards of concrete flooring was laid in basement ; e-box of the steam boiler was re-lined with fire-brick; 4 rooms were cleaned, and painted; one office had a new hardwood floor; 1 new glazed partition was ; 16 cupboards and pigeon-hole cases were supplied to the Agriculture Depart- nd of other articles of furniture there were supplied 22 to the Agriculture De- nt, 35 to the Interior, and 58 to the Post Office Department. Considerable re- ere made to furniture and fittings, 53 panes of glass were reglazed and a large r of minor works, among which were 136 jobs of painting, lettering, &c., and s of joinery.

large number of steel fittings were supplied to the Agriculture, Interior and ffice Departments. There were installed additional electric lights, as follows : tric lamps, 19 drop lights, 116 drop lights, 2 ceiling lights, 74 portable lamp- and 4 meridian electric lamps. The electric bell systems of the Post Office griculture Departments were rearranged, an indicator box was put up in the r Department, as well as two new bell servies. One wall 'phone, one wash basin e water closet were fitted up.

ork done under the supervision of this department.

echanical engineer, Wm. King.

erk of works, F. Breton.

LABOUR DEPARTMENT.

is is a suite of rented offices, situated on Metcalfe street, opposite the Langevin Three rooms were cleaned, tinted and painted, a large quantity of shelving was attic as well as cupboards and 8 pieces of furniture. Repairs were made to the , painting and joinery.

GEOLOGICAL MUSEUM.

e laboratory room in basement was fitted up and the original drawing offices to the library and fitted up with shelves, cupboards, pigeon-holes, book-cases, chairs, drawer cases, &c. The walls of these as well as four of the offices were l and tinted and the woodwork painted or oiled and varnished. The caretaker's s were cleaned, painted, papered, tinted, &c., throughout. Extensive repairs ade to walls and chimneys of the museum building, and a new chimney was

built. The rented annex was provided with a hot water heating apparatus, som
tional electric lamps and drop lights, and plumbing and water supply service
In the library the heating coils were altered and in part renovated, some
tional coils were fitted up in one of the offices and alterations made to plumbing,
Work done under the supervision of this department.
Mechanical engineer, Wm. King.
Clerk of works, F. Breton.

MAJOR'S HILL PARK.

The new kiosk was completed and painted, the summer benches were re
and painted. A plank sidewalk 80 feet long was laid on St. Patrick street a
sidewalk on Mackenzie avenue repaired.

PARLIAMENT BUILDING.

Four offices were cleaned, tinted and painted; one office had a new hardwoo
a new porch was built at Commons messengers' entrance; 2 new windows wer
plied the Senate, and the floor of the Library cleaned and polished. Forty-one
of new furniture and 500 map rollers were supplied; a large quantity of shelvi
put up in Library and all the furniture of the House of Commons cleaned. Fo
ditional transformers with marble switchboards, &c., were installed, as also 4 e
fans, one each of 12 ft. and 24 ft., and 2 of 16 ft. diameter; 41 additional e
lights with fixtures, wires, &c., complete, were installed; 4 new rooms in the atti
heated, lighted and fitted up on the Senate side, and also a new lavatory with
basins, lighting, &c. A new English gas stove was fitted up in the Commons re
ant, and a wash basin in the office of the clerk of the House.
The fire-boxes of the boilers were lined with fire bricks; 125 panes of glass w
newed throughout the building; 33 door-plates were lettered and there were 81
works of painting and 155 minor works of carpentry effected. Two porch roof
covered with copper, new galvanized iron ventilation pipes were supplied the
of Commons, as well as 4 new chimney cowls. The carpets were taken up, cleane
relaid, the double windows and summer blinds were taken off, stored, cleaned a
on periodically, and the roofs, roads and footpaths kept clear of snow duri
winter.
Work done under the supervision of this department.
Mechanical engineer, Wm. King.
Clerk of works, F. Breton.

PARLIAMENT GROUNDS.

A portion of the drain at the outlet in river was renewed, and a pier built
let. Two large concrete piers were built at the entrance of the dump. The roof
summer house and all the benches were painted; 185 feet of new benches wer
vided. Repairs were made to the green-house, and 385 lights of glass renewed th
Extensive repairs were made to railings in Lovers' Walk.

CITY POST OFFICE.

On January 4, 1904, the greater part of the first floor inside, the attic stor
the unfinished loft over, were destroyed by fire, and the ground floor damag
water, and immediate steps were taken by the provision of a temporary roof co
and other works to render it fit for re-occupation by the postal authorities;
which was accomplished by January 28, 1904. The Customs and Inland Re

ıent which had quarters in the building were removed to the Wood's building, street and the Seybold building, Sparks and O'Connor streets, respectively. ended to take down the attic story walls, erect on the first floor walls another nilar thereto and replace the attic story thereon.
ns, specifications &c., prepared and work carried on under the superintendence lepartment.

PRINTING BUREAU—ADDITION TO WEST WING.

January 13, 1904, a contract was entered into for a one story addition 50 lengh by 53 feet in breadth to the north of the west wing. The walls are to on a stone foundation, the ceiling of brick and iron and the floor cement. There is a single row of columns lining with those of the press room and ng the ceiling. Above the ceiling is a tar and gravel roof covering.
ns, &c., prepared by this department.
rk of works, P. Canty.
ıtractors, Wm. Doran and R. M. Devlin.

PRINTING BUREAU—MINOR WORKS, REPAIRS, &C.

o rooms in attic were divided by partitions, a glass partition and platform linotype machines were built, a new roof was erected over a portion of the the rear of the building and the carpenter's shop was re-shingled. A large of the woodwork was repainted and repairs made to glazing. Three hundred een square yards of granolithic footpaths with 220 feet lin. of gutter was side. A new drain was excavated for and laid, two new manholes were built rge number of the original drain pipes renewed. A 4 foot sidewalk of 2 inch as laid at the west side of the building and a 3 foot walk of similar material long, from the building to the gate leading to Nepean Point. A new feed eater was fitted up in boiler room, changes were made in the gas fixtures, ve new jets were added and a new electric bell installed.
rk done under the supervision of this department.
chanical engineer, Wm. King.
rk of works, F. Breton.

SUPREME AND EXCHEQUER COURTS.

the offices, corridors, &c., of the Exchequer Court were cleaned, tinted and and the glazing repaired. Four pieces of furniture and two sets of large book- ere supplied and repairs made to joinery. A portable electric lamp was sup- d a system of electric bells between registrar's and secretary's rooms installed.
rk done under the supervision of this department.
chanical engineer, Wm. King.
rk of works, F. Breton.

ROYAL OBSERVATORY.

's building which was described in a previous report is in progress and is l to be completed at an early date. A hot water heating apparatus is being l.
ns, &c., prepared and work superintended by this department.
rk of works, P. Canty.
ıtractor for construction of the building, Théophile Viau.
ıtractors for heating, Butterworth Bros.

REPAIRING STREETS, &C.

A drain was laid along the western side of the canal from the bridge river; the sidewalk on Sappers bridge was repaired and partly renovated; square feet of granolithic sidewalk was laid along the Elgin street boundary of square; scraping, cleaning and general repairs were done to the various ro footpaths and streets under the control of the department. Rubbish, scrapin ashes were removed from the east block, west block, Langevin Block, Parliament ing, the workshops, printing bureau, the museums, the several rented buildin the various streets and deposited at Nepean Point; the grass at printing Wellington street, two bridges, fisheries museum and geological museum wa clipped and the ashes removed from the boiler houses; the roadways, sidewalk paths, roofs and yards kept clean of snow during the winter.

Work done by the departmental staff, C. Leblanc, foreman.

WESTERN BLOCK.

The floor of the cement testing laboratory in basement with the bed rock were taken out to a depth sufficient to allow of the placing of new testing mac Further works, in completion of this, will be done during the next fiscal year.

In twenty-one offices new hardwood floors were laid, seventy-seven room cleaned, tinted and painted and picture moulding put up in fourteen rooms. were 261 articles of furniture supplied the various departments throughout the ing exclusive of 11 cupboards, 56 brass rods with curtains, 350 hat hooks with therefor, 500 wooden pins, 106 sets of map rollers, 6 cushions, 7 map racks, 61 ing cases and 400 window strips. A large number of steel fittings were furni the Railways and Canals, Public Works and Inland Revenue Departments. S sashes and frames were put in. 13 baize doors were provided and 13 rooms fit with shelving, &c. Seven glass partitions were erected and 177 lights of windo reglazed. There were installed new electric lights as follows:—twenty-tw lights, ten portable desk lights, one bracket, one meridian and four electroliers v aggregate of nineteen lights. Four 12-inch electric fans with switches, &c installed.

The heating system was improved by the addition of the vacuum apparatus Webster system of steam heating.

Three new lavatory basins and a new urinal were fitted up and repairs and ations made to portions of the bell service.

Of minor jobs of painting and lettering there were 957, and of joinery, 561 roofs, roads and footpaths were kept free from snow. The winter sashes and s blinds were cleaned, put on, taken off and stored periodically.

Work done under the supervision of this dpartment.

Mechanical engineer, Wm. King.

Clerk of works, F. Breton.

BUILDINGS AND GROUNDS GENERALLY.

In addition to the works mentioned in the foregoing there are innum smaller works, *i.e.*, there are 535 items of repair done by the roofers, 278 done masons; items taking each from one to five days work of a tradesman besides m to accomplish; and proportionally in connection with the other trades. Besi these, in connection with the various other buildings, the property of the gover there are similar works of repair, painting, furnishing, tinting, &c., in connectio a number of rented buildings; also such works as repairs to and renewals of c other sheds, works of a general character such as the erection and taking do storing of porches, winter boarding outside steps, &c., &c., all of which are d the departmental staff.

AL PAPER No. 19

ST. CATHARINES.

DRILL HALL.

une 2, 1904, a contract was entered into for the construction of this building ersection of Lake and Elizabeth streets, on the southwest corner. The build- have a frontage of 218 feet on Elizabeth street and 106 feet on Lake street of two projections of seven feet six inches towards Elizabeth and minor pro- on Lake street. The main hall is to be on the western side with a direct en- the North from Lake street and is to be 160 feet by 75 feet inside measure- the east and south of the main hall there is to be a two story and part base- ge of building containing on the ground floor, the artillery gun shed, eight s, three harness rooms, a commanding officer's office, an orderly room, quarter- stores, a spare room, a lavatory room, the main entrance to the main hall and way; in the basement the fuel and furnace rooms, and, on the first floor a oom, officers' mess room, three sergeants' rooms, a commanding officer's room, y room, an ante-room, three store rooms, a reading room, a veterans room, a n and six rooms for the caretaker. The walls are to be bricked with stone dress- on a stone basement, roofs and floors wood, the roof principals of iron and covering in part metal and the remainder tar and gravel.

s, &c., prepared by this department.

dent architect and clerk of works, G. Dolson.

ractors, Messrs. Sullivan & Langdon.

TORONTO.

GENERAL POST OFFICE.

contracts, for the lavatory addition to the general post office, the opening up ound floor from Adelaide Street through to Lombard Street, the alterations to floor, and the erection of a passenger elevator were completed.

e-proof vault was constructed and provided with steel fittings.

tional fittings and furniture were also provided.

rations in the arrangement of the fittings and furniture were made, as the s to the building proceeded, and the usual repairs to the building and furni- e made.

k supervised by S. G. Curry, architect, Toronto.

EXAMINING WAREHOUSE.

rations were made to the examining warehouse to provide separate and more ous accommodation for the express companies until such time as the addition arehouse is completed. Repairs were made to the water mains and eave-

k supervised by S. G. Curry, architect, Toronto.

RECEIVER-GENERAL'S OFFICE.

walls and ceilings of the office of the Receiver-General were painted and a lar proof steel safe provided and placed in the vault.

k supervised by S. G. Curry, architect, Toronto.

DRILL HALL.

The four corner towers of the drill hall were reroofed above the old roo minor repairs made and a granolithic sidewalk laid in front of the building versity Street.

Work supervised by S. G. Curry, architect. Toronto.

TORONTO JUNCTION.

PUBLIC BUILDING.

A site for this building was procured having frontages on Keele street, street and lane, of 130 feet, 60 feet and 60 feet, respectively, and a contract construction entered into May 29, 1903. It is a two story brick building l wooden mansard attic and a stone basement, measuring 58 feet by 42 feet 6 together with a one-story brick adjunct on a stone basement measuring 16 fe feet 6 inches. There is a square tower over the principal entrance on Keele a das streets, which extends up two additional stories and is covered with a py roof. The basement under the adjunct is floored in concrete, and is to con heating furnaces and fuel. The ground floor of the main portion is the po and of the adjunct the examining warehouse; the first floor has the customs lo collectors' offices, two spare offices and w.c. room, and in the attic are six roon bath room for the caretaker. The floors, stairways, partitions of first floor a and the roofs are of wood, the deck and flat roofs being covered with felt and while the slopes and dormers are metal covered.

Plans, &c., prepared by this department.

Clerk of works, John Patterson.

Contractors, Joy & Needham.

WINGHAM.

POST OFFICE.

On June 24, 1904, a contract was entered into for the construction of th ing on Josephine street. It is to be a brick building on a stone basement, co of a main portion 2½ stories and basement measuring 50 feet by 40 feet, a and basement tower measuring 15 feet by 15 feet, and a one story and basem junct in rear 28 feet by 19 feet. The floors and roofs are to be wood. The b will contain heating furnaces, fuel, water closets and store rooms; on the floor the main building is to be the post office and the adjunct the custom tor's office, and examining warehouse: on the first and attic floors there are six living rooms, exclusive of the bath room in attic.

Plans, &c., prepared by this department.

Contractor, S. S. Cooper.

PROVINCE OF MANITOBA.

WINNIPEG.

POST OFFICE.

A temporary wooden building to provide additional postal facilities was by permission of the city corporation on Haymarket square. In the post offi

NAL PAPER No. 19

v money order office and savings bank were fitted up ; a fire-proof safe sup- the customs parcel office ; some fittings and furniture to railway mail office, ffices, shelving and painting to Dominion lands office and painting for the offices.

ork supervised by J. Ernest Cyr, clerk of works, Winnipeg, Man.

EXAMINING WAREHOUSE.

e public works offices were transferred from the post office building to the or of this building which was fitted up and re-arranged for their reception.

ork supervised by J. Ernest Cyr, clerk of works, Winnipeg, Man.

BRANDON.

POST OFFICE.

e customs offices were fitted up with cases for books and papers ; additional nd newspaper boxes were furnished the post office, and the bag rack extended; ew furniture was supplied ; two new outside porches were built and the fence ere repaired.

NORTH-WEST TERRITORIES.

RED DEER, ALBERTA.

COURT HOUSE.

site was obtained comprising lots 9 to 29, both inclusive, in block 18, together he intervening public lane, thus providing a block having frontages on Mc- avenue, Ross street and Main street, and on September 7, 1903, a contract tered into for the construction of the building. The building will be 2½ stories k on a stone basement, measuring 53 feet by 34 feet exclusive of projecting s. The basement is floored with concrete, has a brick vault and three brick nd is to contain heating furnace and fuel. The partitions excepting those of he floors excepting basement, the roof, porches and stairways are wood. The l floor contains two vestibules, two stairways, a passage, one brick safe, two for lands, a guard room, 3 cells for prisoners, a kitchen, a store-room and two ing porches. There are four entrances, one in front, one in rear and two on ght side. On the first floor, mid-length, is the court room occupying all but t at either end and extending up into the attic. At one end of the court room oms for judge, jury and bar, and at the other a room for witnesses.

ans, &c., prepared by this department.

erk of works, Hugh Clark.

ontractors, Johnston & Tait.

REGINA, ASSINIBOIA, WEST.

IMMIGRATION BUILDINGS.

two and a half stories wooden building, 60 feet in length by 31 feet 6 inches adth with a one story, 16 feet by 14 feet in rear. There is no basement, the

building resting on a foundation of wooden blocks. There is a detached woode
ing 16 feet 6 inches by 10 feet 6 inches for latrines.

On the ground floor of the main building are a hall, an office, a kitcl
six rooms of various sizes. The one story adjunct is for use as an outside
On the first floor are a passage from end to end and on either side, six room
attic is unfinished.

Plans, &c., prepared by this department.

Clerk of works, John Morrison.

Contractor, D. C. Macdougal.

PROVINCE OF BRITISH COLUMBIA.

NANAIMO.

PUBLIC BUILDING.

On May 4, 1904, a contract was entered into for a one story and basement
to accommodate the Customs Department. The addition will be of stone sir
detail to the original building 45 feet long by 40 feet broad and containing
basement a brick safe opening into the examining warehouse under the origina
ing, a w.c. room, a stairway hall and a furnace and fuel room ; the partitic
piers in basement are to be of brick and the floor concrete. The ground fl
contain the examining warehouse, an office for the collector and two brick va
opening into the long-room and the other into the post office in the original b
There is to be a public entrance on the street front and an entrance to the
hall from the post office.

Plans, &c., prepared by this department and work supervised by Wm. He
of this department, Victoria, B.C.

Contractor, Alexander Forrester.

NEW WESTMINSTER.

The ground adjoining the building was excavated, graded, covered with
seeded down with grass and the roads gravelled. A cement concrete gutter v
at north-east end of grounds and the external surface of north-east wall plaster
cement mortar.

Work supervised by Wm. Henderson, of this department, Victoria, B.C.

ROSSLAND.

DRILL SHED.

A contract for the construction of this building was entered into on June 1
It is to be a brick building on a stone basement, the latter lined with brick and
brick partitions and concrete floor. The building is to be 102 feet in length, ex
of an entrance porch 14 feet 10 inches by 8 feet 6 inches, and 52 feet in width
basement story is 10 feet from floor to ceiling, and the ground floor 27 feet.
basement are to be a shooting gallery 85 feet by 15 feet, an armoury 48 feet by
a furnace-room, a fuel-room, a store-room, a shower-room and a water closet

ınd floor excepting, 12 feet of the length, which is divided into officers' room and .O. room, is the drill hall. There is a gallery above the officers' rooms at the end he hall with a stairway thereto. The flooring, partitions and stairs on the ground r as well as the roof are to be wood, the roof covering of metal.

Plans, &c., prepared by this department.

Clerk of works, R. W. Grigor.

Contractor, Geo. Gillett.

VANCOUVER

PUBLIC BUILDING.

The mails roadway was paved with wood blocks on a concrete foundation, properly ined, and the cement sidewalk in front of building repaired. Alterations were made basement for caretaker's rooms involving building up openings in brick walls, also tering, carpentry, papering, kalsomining and varnishing. The floor of public y was removed and replaced by one of oak. The stamp-vendor's office in lobby removed, a new stamp-vendor's office was constructed and the writing desk was red in position. Tables were made and pigeon-hole cases fitted up for delivery e and for sorting-room, two half doors for money order office and shelves in post e inspector's cupboard. Sixty-seven post office lock boxes were numbered, the bulle- boards were painted and lettered and iron bars were fitted in position outside of stry office. Partitions in customs long-room were taken down to give additional mmodation ; a platform and shelving was constructed and three brass plates raved for customs. The flag-pole was painted and ball thereof gilded.

Work supervised by Wm. Henderson, of this department, Victoria, B.C.

DRILL HALL.

The external surface of the walls of building was plastered in cement mortar and battlements and all stonework painted in mastic. All under the supervision of n. Henderson, of this department, Victoria, B.C.

VICTORIA.

DRILL HALL.

A cement concrete sidewalk having block paved driveways was laid along the nzies street line of the property by the municipal staff of workmen.

INDIAN AFFAIRS AND MARINE OFFICE (OLD CUSTOM HOUSE).

A new picket fence was erected at front and sides of property with double gate for t entrance to wharf and single for foot pasengers, and the old fences and gates e repaired. A new water main with connections to wharf was laid and lavatory ins fitted up in the offices of the boiler inspector and Superintendent of Indian airs.

The fire-places in Indian Department were built up and a new stove and pipes plied therein. A bath was fitted up and connected in caretaker's quarters and the set tanks were cleaned and repaired. The fences and flag pole were painted.

Work supervised by Wm. Henderson, of this department, Victoria, B.C.

OLD POST OFFICE BUILDING.

A cement concrete sidewalk was laid along the Menzies street line of the pr by the municipal staff of workmen.

The cement work on main cornices of building and on firewalls at north and ends was renewed and repaired. The south wall was plastered, the chimneys re with cement mortar. The ground floor joisting and flooring were renewed, the tions underpinned and the sleeper walls repaired and in part renewed. One plate glass window was inserted in the front, the skylights were renovated and of the gravel roof repaired. A new tank was supplied, and the plumbing cleane and repaired generally. The flag pole was taken down and securely replace painted. The whole of the front of the building as well as those portions of th exposed above adjoining buildings was painted.

Work supervised by Wm. Henderson, of this department, Victoria, B.C.

PUBLIC BUILDING.

The granite steps at public entrances were roughened to prevent slipping portion of the cement sidewalk was taken out and replaced. Heating stoves and were supplied and fitted up in examining warehouse, the heating furnaces wer vided with new gaskets and some new hangers were put in to suspend the larg nace smoke-pipe. One thousand feet of shelving was provided in basement for ant Receiver General and some openings in brick walls were built up anent sam wash basin was fitted up and connected, and also a portable lamp provided for th lector of Customs. Eight rubber mats, screw hooks, bulletin boards and a cu were supplied to the customs, a rug to the Savings Bank Department, and ma racks, letter racks, sorting table, two cases of pigeon-holes and a shelf on iron for post office. Repairs were made to copper roof, cornices and vallies, ciste caretaker's quarters, bath connections, two wash basins and one wash basin was passenger elevator, the doors of post office, an oak screen in Customs and the plas in basement. One blind and also four lettered zinc signs were supplied and som letin boards lettered. Two hundred and twenty-five feet of shelving and one hu and eight new lock drawers were fitted up in post office, and the mail bag rack 'Victoria' was fitted up with bag hooks. The stamp vendor's office was chan position; a wash basin was fitted up and connected in the Savings Bank Depar and a smoke consumer constructed in basement.

Work supervised by Wm. Henderson, of this department, Victoria, B.C.

WILLIAMS HEAD.

QUARANTINE STATION.

A concrete step was placed at the bottom of each flight of wooden steps th out; the north wall of the boiler house was plastered with cement mortar ; the c concrete floor in boiler house and the brickwork of boiler were repaired and th of boiler house was coated with pitch and gravel. New elbows were put on con pipes of main hospital and first-class detention buildings, a new engine cross-he one arc lamp were supplied and the water supply pipes in main hospital building renewed and repaired. The tramway on wharf was extended twenty-five feet. hundred feet of shelving was fitted up in laundry building.

Work done under the supervision of Wm. Henderson, of this department, toria, B.C.

ION PUBLIC BUILDINGS, JUNE 30, 1904, EXCLUSIVE OF THE ENITENTIARIES, INDUSTRIAL SCHOOLS, MARINE HOSPITALS AND MOUNTED POLICE BUILDINGS.

PROVINCE OF NOVA SCOTIA.

Amherst, public building.
Annapolis, public building.
Antigonish, public building.
Arichat, post office.
Baddeck, public building.
" armoury.
Dartmouth, post office.
Digby, public building.
Guysborough, public building.
Halifax, custom house (in progress).
" Dominion building.
" drill hall.
" examining warehouses (rented building).
" immigration building.
" quarantine (Lawlor's island).
Kentville, public building.
Liverpool, post office.
Lunenburg, public building.
Middleton, armoury.
Nappan, experimental farm.
New Glasgow, public building.
North Sydney, public building.
Pictou, custom house.
" post office.
" quarantine station.
Springhill, public building.
Sydney, public building.
" quarantine station.
Truro, public building.
Windsor, public building.
" drill hall.
Yarmouth, public building.

PROVINCE OF PRINCE EDWARD ISLAND.

Charlottetown, Dominion building.
" quarantine station (South port).
Montague, post office.
Summerside, public building.

PROVINCE OF NEW BRUNSWICK.

Bathurst, public building.
Carleton (St. John, West), public building.
Dalhousie, post office.
Fredericton, infantry school.
" public building.
Marysville, post office.
Middle Island, quarantine.
Moncton, public building.
Newcastle, public building.
Portland (St. John, North), post office.
Richibucto, public building.
St. John, custom house.
" drill hall.
" immigration building.
" post office.
" quarantine (Partridge Island).
" savings bank.
St. Stephen, public building.
Sussex, public building.
" armoury.
Tracadie, Lazaretto.
Woodstock, public building.

PROVINCE OF QUEBEC.

L'Assomption, post office.
Aylmer, post office.
Berthierville, post office.
Buckingham, post office.
Coaticook, public building.
Drummondville, public building.
Dundee, customs house.
Fraserville, public building.
Farnham, post office.
Granby, public building.
Grosse Ile, quarantine station.
Hochelaga, post office.
Hull, post office.
Joliette, public building.
Lachine, post office.
Laprairie, post office.
Lévis, immigration shed.
" cattle quarantine.
Montreal, custom house.
" drill hall.
" examining warehouse.
" Inland Revenue building.
" post office.
Péribonka, immigration building.

PROVINCE OF QUEBEC—*Concluded.*

Quebec, artillery workshops.
" cartridge factory.
" citadel.
" custom house.
" drill hall.
" examining warehouse.
" immigration building.
" iron foundry.
" marine agency.
" observatory.
" post office.
Richmond, public building.
Rimouski, public building.
Roberval, immigration building.
St. Henri, post office.
St. Hyacinthe, public building
" inland revenue building.
St. Jérôme, public building.
St. Johns, public building.
" infantry school.
St. Régis, custom house.
Sherbrooke, public building.
Sorel, public building.
Thetford Mines, public building.
Three Rivers, custom-house.
" post office.
Valleyfield, post office (in progress).
Victoriaville, public building.

PROVINCE OF ONTARIO.

Alexandria, public building (in progress).
Almonte, public building.
Amherstburg, public building.
Arnprior, public building.
Barrie, public building.
Berlin, public building.
Belleville, public building.
Bowmanville, post office.
Brampton, public building.
Brantford, public building.
Brockville, public building.
" drill hall.
Carleton Place, public building.
Cayuga, post office.
Chatham, public building.
Clinton, post office.
Cobourg, public building.
Cornwall, public building.
Deseronto, public building.

PROVINCE OF ONTARIO—*Continued.*

Dundas, armouries.
" post office (rented building).
Fort William, public building.
Galt, public building.
Gananoque, custom house.
" post office.
Goderich, public building.
Guelph, public building.
Hamilton, public building.
" drill hall.
" custom house (old).
Ingersoll, public building.
Kingston, custom house.
" drill hall.
" Military College buildings, Fort Frederick.
" post office.
Lindsay, public building.
London, custom house.
" drill hall.
" infantry school.
" post office.
Napanee, public building.
Niagara Falls, public building.
Orangeville, post office.
Orillia, public building.
Ottawa, Central Experimental Farm
" drill hall.
" Eastern Departmental block.
" Fisheries Museum and Art Gallery.
" Geological Museum.
" Government House.
" Langevin block.
" laboratory (bacteriological).
" military store building.
" observatory.
" Parliament Buildings.
" Printing Bureau.
" post office, customs and inland revenue.
" Supreme and Exchequer Courts
" Western departmental block.
Paris, public building.
Pembroke, public building.
Petrolia, public building.
Peterborough, custom house.
" post office.
Picton, public building.
Port Arthur, public building.
Port Colborne, public building.
Port Dalhousie, custom house
Port Hope, public building.
Prescott, custom house.

PROVINCE OF ONTARIO—*Concluded.*

Prescott, Fort Wellington.
" post office.
Rat Portage, public building.
Sarnia, immigrant building.
Smith's Falls, public building.
St. Catharines, public building.
" drill hall.
St. Thomas, armoury
" public building.
Sarnia, public building.
Sault Ste. Marie, public building.
Strathroy, public building.
Stratford, public building.
Toronto, custom house.
" drill hall.
" examining warehouse.
" immigration building.
" infantry school and drill shed.
" post office.
" postal station 'A.'
" postal station 'C.'
" Junction, public building.
Trenton, public building.
Walkerton, public building.
Windsor, drill hall.
" public building.
Woodstock, public building.

PROVINCE OF MANITOBA.

Brandon, experimental farm.
" immigration building.
" public building.
Birtle, immigration station.
Dauphin, immigration station.
East Selkirk, immigration shed (old C.P.R. round house).
Fort Osborne, infantry school.
Minnedosa, immigration shed.
Portage la Prairie, public building.
Winnipeg, custom house.
" examining warehouse.
" immigration hospital.
" immigration hall.
" lands office.
" post office.

NORTH-WEST TERRITORIES.

Alberta.

Calgary, court house.
" immigrant shed.
" public building.
Edmonton, immigration shed.
" registry office.
" jail (in progress).
Lethbridge, public building.
" immigration building.
MacLeod, custom house.
" court house.
Red Deer, court house.
St. Mary's, custom house.
Strathcona, immigration building.

Assiniboia East.

Carnduff, court house.
Indian Head, experimental farm.
Moosomin, court house.
Qu'Appelle, immigrant shed.
Wolseley, court house.
Yorkton, court house.

Assiniboia West.

Medicine Hat, court house.
" immigration shed.
Moosejaw, court house.
Regina, court house.
" council chamber
" government house.
" government offices.
" immigration shed.
" land and registrar's office.
" post office.

Saskatchewan.

Battleford, commandant's residence.
" government house
" immigrant shed.
" magistrate's residence.
" registrar's residence.
" registry office.
Prince Albert, court house and jail.
" immigrant shed
" land and registry office.
Saskatoon, immigration building.

YUKON TERRITORY.

Clear Creek, mining office.
Dawson, administration building.
" court house.
" commissioner's residence.
" post office.
" departmental stores.
" telegraph office.
Whitehorse, post office.

BRITISH COLUMBIA.

Agassiz, experimental farm.
Kaslo, armoury.
Kamloops, armoury.
" public building.
Nanaimo, public building.
Nelson, public building.
" armoury.
New Westminster, drill hall.
" public building.
Revelstoke, armoury.
Rossland, public building.
" armoury.
Vancouver, immigrant building.
" drill hall and gun shed.
" public building.
Victoria, artillery barracks.
" drill hall.
" custom house (Marine and Indian Affairs offices).
" military storehouse.
" post office (old).
" powder magazine.
" public building.
William's Head, quarantine station.

PART IV

CHIEF ENGINEER'S REPORT

ON

HARBOUR AND RIVER WORKS

INCLUSIVE OF

GRAVING DOCKS AND DREDGING OPERATIONS

ALSO

ROADS, BRIDGES AND SURVEYS THROUGHOUT THE DOMINION.

REPORT OF THE CHIEF ENGINEER

DEPARTMENT OF PUBLIC WORKS OF CANADA,
CHIEF ENGINEER'S OFFICE,
OTTAWA, December 15, 1904.

D. GÉLINAS, Esq.,
Secretary,
Department of Public Works.

SIR,—I have the honour to submit the annual report on the various works under charge during the fiscal year ended June 30, 1904.

These works comprise the construction and repair of wharfs, piers, breakwaters, ms, weirs, bank and beach protection works; the improvement of harbours and ers by dredging; the construction, maintenance and operation of government edging plant; the construction and maintenance of graving docks; the construc-n, maintenance and working of slides and booms; the construction and main-ance of interprovincial bridges and approaches thereto, and of bridges on highways federal importance in the North-west Territories and the maintenance of military ds; also hydrographic and ordinary surveys and examinations, inclusive of pre-ion levelling and geodetic measurements which are required for the preparation plans, reports and estimates; the testing of cements, &c.

I have the honour to be, sir,
Your obedient servant,

EUG. D. LAFLEUR,
Acting Chief Engineer.

During the fiscal year 1903-04, surveys, examination or inspections were m
the following places :—

NOVA SCOTIA.

Abram's River, Yarmouth County.
Argyle Sound, Yarmouth County.
Avonport, Hants County.
Baddeck, Victoria County.
Bass River, Colchester County.
Breen Pond, Antigonish County.
Broad Cove, Inverness County.
Canning, King's County.
Charlo's Cove, Guysboro County.
Cheggogin, Yarmouth County.
Cheggogin Point, Yarmouth County.
Cherry Hill, Lunenburg County.
Cheverie, Hants County.
Church Point, Digby County.
Clam Harbour, Halifax County.
Country Harbour, Guysboro County.
Cow Bay, Halifax County.
Cribbin's Point, Antigonish County.
Cunningham's Point, Guysboro County.
Deep Brook, Annapolis County.
D'Escousse, Richmond County.
Devil Island, Halifax County.
Digby, Digby County.
Duncan's Cove, Halifax County.
East Jeddore, Halifax County.
Economy, Colchester County.
Five Islands, Colchester County.
Freeport, Digby County.
French Village, Halifax County.
Grand Etang, Inverness County.
Granville Centre, Annapolis County.
Grosses Coques, Digby County.
Hampton, Annapolis County.
Hantsport, Hants County.
Herring Cove, Halifax County.
Horton Landing, King's County.
Indian Harbour, Halifax County.
Iona, Victoria County.
Janvrin's Island, Richmond County.
Kingsburg, Lunenburg County.
Kingsport, King's County.
Little Bras d'Or, Cape Breton County.
Little Brook, Digby County.
Litchfield, Annapolis County.
Long Point, Inverness County.
Lower East Pubnico, Yarmouth County.
Lower West Pubnico, Yarmouth County.
Margaretville, Annapolis County.
Melbourne, Yarmouth County.
Meteghan, Digby County.
Meteghan River, Digby County.
Middle East Pubnico, Yarmouth Co
Mill Cove, Lunenburg County.
Musquodoboit, Halifax County.
Necum Teuch, Halifax County.
Neil's Harbour, Victoria County.
Newport Landing, Hants County.
Noel, Hants County.
Ogilvies, King's County.
Parker's Cove, Annapolis County.
Peggy's Cove, Halifax County.
Pembroke, Hants County.
Petite Rivière, Lunenburg County.
Picket Pier, King's County.
Plympton, Digby County.
Port au Pique, Colchester County.
Port Beckerton, Guysboro County.
Porter's Lake, Halifax County.
Port George, Annapolis County.
Port Maitland, Yarmouth County.
Poulamond, Richmond County.
Prospect, Halifax County.
Quoddy, Halifax County.
Rawdon, King's County.
Round Hill, Annapolis County.
Sandy Cove, Digby County.
Sanford, Yarmouth County.
Saulnierville, Digby County.
Scott's Bay, King's County.
Short Beach, Yarmouth County.
Spry Bay, Halifax County.
Summerville, Hants County.
Tancook, Lunenburg County.
Tenecape, Hants County.
Three Fathoms Harbour, Halifax C
Tittle Passage, Guysboro County.
Tiverton, Digby County.
Upper Granville, Annapolis County.
Victoria, King's County.
Walton, Hants County.
Wedge Point, Yarmouth County.
Wentworth, Hants County.
West Arichat, Richmond County.
West Chezzetcook, Halifax County.
Westport, Digby County.
West Pubnico, Yarmouth County.
White's Cove, Digby County.
Windsor, Hants County.
Wolfville, King's County.
Yarmouth Bar, Yarmouth County.
Yarmouth Harbour, Yarmouth Cou

PRINCE EDWARD ISLAND.

Shore Pier, King's County.
ier, Queen's County.
er, Queen's County.
c Harbour, Prince County.
town (Marine & Fisheries Dep.
Queen's County.
int Pier, Queen's County.
d Harbour, Queen's County.
ver Pier, King's County.
Shore Pier, Prince County.
McPherson's Cove, King's County.
Mink River Pier, King's County.
Murray Harbour South, King's County.
Oyster Bed Bridge, Queen's County.
Savage Harbour, King's County.
Sturgeon Pier, King's County.
Vernon River, Queen's County.
Victoria Pier (Crapaud), Queen's County.
West Point Wharf, Prince County.
Wood Islands Breakwaters, Queen's County

NEW BRUNSWICK.

s Hollow, Albert County.
Gloucester County.
Vin (Lower), Northumberland
arbour, Charlotte County.
Westmoreland County.
ook, Northumberland County.
e, Kent County.
urch, Northumberland County.
on, Restigouche County.
nentine, Westmoreland County.
Gloucester County.
Kent County.
, Restigouche County.
Landing, Albert County.
on, Madawaska County.
erin, St. John County.
n, York County.
Creek, Queen's County.
nse, Gloucester County.
lls, Victoria County.
Canal, Queen's County.
e Island, Albert County.
Albert County.
Cape, Albert County.
Hill, Albert County.
Gloucester County.
ve, Charlotte County.
y, Charlotte County.
Mispec, St. John County.
Mizonette, Gloucester County.
Negropoint, St. John County.
Neguac, Northumberland County.
Nelson, Northumberland County.
North Head, Charlotte County.
North-west Miramichi, Northumberland County.
Oromocto, Sunbury County.
Partridge Island, St. John County.
Pointe du Chêne, Westmoreland County.
Quaco, St. John County.
Richibucto, Kent County.
River St. John, York & Carleton County.
St. Andrews, Charlotte County.
St. George, Charlotte County.
St. Louis, Kent County.
St. Stephen, Charlotte County.
Sand Point (St. John Harbour), St. John County.
Seal Cove, Charlotte County.
Shippegan, Gloucester County.
Stonehaven, Gloucester County.
Tracadie, Gloucester County.
Tynemouth Creek, St. John County.
Upper Salmon River, Albert County.
Wilson's Beach, Charlotte County.
York Point (St. John Harbour), St. John County.

QUEBEC.

ies, Chicoutimi County.
Pontiac County.
, Chicoutimi County.
ns, Chicoutimi County.
hes, Chicoutimi County.
u Fort, Pontiac County.
f, Chicoutimi County.
Quebec County.
River Ashouapmouchouan, Saguenay County.
Rivière Ouelle, Kamouraska County.
Rivière Valin, Saguenay County.
St. Alexis, Chicoutimi County.
St. Charles Borromée, Chicoutimi County.
St. Firmin, Chicoutimi County.
St. Gédéon Islands, Chicoutimi County.

ONTARIO.

Barrie, Simcoe County.
Bayfield, Huron County.
Baysville, Muskoka & Parry Sound County.
Beaverton, Ontario County.
Belle River, Essex County.
Blind River, Algoma County.
Burgess Township, Lanark County.
Burleigh Falls, Ontario County.
Colchester, Essex County.
Coldwater, Essex County.
Dunnville, Haldimand County.
East River, Muskoka County.
Echo Bay, Algoma County.
Emily River, Victoria County.
Etobicoke River, York County.
Fort William, Algoma County.
Gravenhurst, Simcoe County.
Hiawatha, Peterboro County.
Indian River, Peterboro County.
Judge's Lake,
Lake Scugog, Ontario County.
Lakes Simcoe and Couchiching.
Little Current, Manitoulin County.
Little Bobcaygeon River, Victoria County.
Malden, Essex County.
Manitowaning, Manitoulin County.
Matchadash, Simcoe County.
Matchadash Bay, Simcoe County.
McCraken's Landing.
Midland, Simcoe County.
Mitchell's Bay, Kent County.
Morpeth, Kent County.
Niagara, Lincoln County.
Oliphant, Bruce County.
Owen Sound, Grey County.
Parry Sound, Muskoka and Parry
County.
Penetanguishene, Simcoe County.
Pike Creek.
Pointe aux Barils, Muskoka and
Sound County.
Port Albert, Huron County.
Port Credit, Peel County.
River Thames, Middlesex County.
Rivière aux Puces, Essex County.
Rondeau and Patterson's Creek
County.
Sarnia, Lambton County.
Stokes Bay, Bruce County.
Tenby Bay, Algoma County.
Washago, Simcoe County.
Waubaushene, Simcoe County.

PROVINCE OF NOVA SCOTIA.

ABBOTT'S HARBOUR.

Abbott's Harbour, some 30 miles from Yarmouth, the county town, is situ
the west side, and near the head of the peninsula forming the western side of
Harbour. It is about 2½ miles to the south of Argyle Sound. The harbour is
by a small island lying about a hundred yards off the mainland. The entrance
harbour to the south is protected by the island and the mainland, and the
entrance is protected by a shingle beach, which, under the action of north
north-westerly seas, was liable to disappear and leave the harbour without pr
The harbour is the head quarters of numerous fishing fleet, and considerable qu
of cod, herring, lobsters and other fish are annually caught and exported.

In 1900-01, the department at a cost of $1,200, constructed a piece of
beach protection, 235 feet long, 8 feet wide on top, 10 feet wide on bottom an
high. It is substantially built of round-log cribwork sheathed on the face wit
sawed stuff, floored with 3-inch plank, well fendered and filled solid with ston
It is admirably serving its purpose in protecting the beach from erosion.

In 1901-02, the department expended the sum of $1,105 in extending th
protection work built the previous year, by a new piece of cribwork 180 feet
feet wide on top, plumb on the seaward side and battering one in four on th
or land side. On the outer end, where the work is 14 feet high, is an 'L' 20 f
and 10 feet wide on top. The remainder of the work is from 4 to 14 feet hig
close-sheathed on the seaward side with 5-inch sawed spruce and covered on
3-inch plank.

In 1903-04, the sum of $625.58 was expended in extending the L of the beach pro-tion work built in 1900-01, by a new block 32 feet long, 10 feet wide on top and m 18 to 20 feet high, substantially, built of round-log cribwork, close-sheathed on e seaward face and filled solid with stone ballast.

Spring tides rise 12 feet ; neaps 10 feet.

ABRAM'S RIVER.

Abram's river, is a small fishing and farming settlement of a couple of hundred ople, situated 13 miles east from the town of Yarmouth. In 1903-04, the department pended the sum of $977.89 (in addition to $60 for purchase of site and the remains an ancient cribwork wharf over which the new work is built), in constructing a bwork and stone wharf. The work consists of a block of substantial cribwork 37 feet ng, 12 feet wide and 15 feet high, with a road approach 100 feet long, walled up with ne on either side and filled with earth and gravel.

Spring tides rise about 12 feet, neaps 10 feet.

AMAGUADUS POND.

Amaguadus pond, Cape Breton county, lies on the northern side of east bay, e eastern arm of the Great Bras d'Or lake ; and is distant about three miles from necadie Point, at the entrance to and sixteen miles from the head of the bay.

It is a large sheet of water, about one mile in length and a quarter of a mile in dth, with a depth of from 2 to 4 fathoms, separated from the bay by a beach of avel overlying clay, of from 100 to 200 feet in width, and about 4 feet above the mmer level of the lake. The outlet is at the eastern end of the beach, but as it is en only for a short period after freshets, and then is available to small boats only, e pond is not of any practical benefit to the inhabitants.

The sum of $2,000 was appropriated for expenditure during 1902-03 towards the nstruction of a wharf. The site was selected on the outside of the beach about 600 et from its eastern end, and a plan and specification were prepared for a block and an wharf 128 feet in length and 20 feet wide with an 'L' on the eastern side of the ter end, 20 by 20 feet, extending into 11 feet at low water, constructed of round tim-r, with creosoted timber superstructure, and estimated to cost $4,000. Out of the nount voted the sum of $1,999 was expended in procuring nearly all the materials quired for the construction of the proposed wharf.

During the fiscal year ended June 30, 1904, the sum of $3,460.97 was expended in ocuring the balance of the materials required and in the construction of the wharf, intended.

The total expenditure to June 30, 1904 is $3,980.52.

ARISAIG.

Arisaig, Antigonish county, is on the northern shore of the Northumberland rait, about 14 miles to the westward of Cape George.

The pier built by the provincial government, prior to confederation, came under e charge of the federal government in 1870. It consisted of an approach 245 feet length and of an outer portion, 174 feet in length, varying from 40 to 44 feet in dth. The approach is constructed with stone retaining walls, filled in with brush, one and clay, and the outer portion is of square native timber cribwork, sheathed the outer faces.

Repairs and improvements were made from time to time, including the construc-on, during 1889-91, of a squared timber extension, 1,000 feet in length. During 96, 1897 and 1898 the seaward face of the pier was strengthened and a block, 24 by feet, built of native squared timber, was placed on the seaward side of the outer

end to strengthen the face-work, and to secure and retain a proposed extension of stone talus, in which some 250 cubic yards of lathe stone were then placed.

In 1898-99, the stone talus along the seaward face of the pier was completed the deposit of 482 cubic yards of large quarried stone, and some covering and fen were renewed.

During the severe northwest gale of September 12, 1900, the work was slig injured, and the sum of $292.18 was expended in the reconstruction of a portion of approach, and in repairs and renewals on the outer portion.

The outer end of the work, built by the local government, for a distance of feet, has been in a bad condition for some years. Temporary repairs have been effe from time to time, but as the timber was old and decayed and did not hold the fas ings, it became necessary to reconstruct the work down to low water mark, and wards this purpose the sum of $900 was appropriated for expenditure during 19 With this amount a section of the old work 49 feet in length, was reconstructed, the balance of the old work was temporarily repaired.

During the fiscal year 1903-04, the sum of $2,488.62 was expended in comple the reconstruction of the outer end of the work built by the local government, d to low water, in sheathing its outer face, and in placing additional heavy stone on talus along the seaward face of the pier.

The depth of water at the outer end of the pier, at low water springs, is 10 Spring tides rise 5 feet.

Total expenditure to June 30, 1904, including refund of $541.41 to provi government, is $38,417.50.

BABIN'S COVE.

Babin's Cove, Richmond county, is on the north side of Arichat Harbour, Madame, and nearly opposite its western entrance.

A wharf, intended for winter service, was constructed by the department, u contract, during 1893, 1894 and 1895, and connected with the public road, by a 410 feet in length. The wharf is 100 feet in length, and consists of a stone abutm 20 by 20 feet on top, with sides and outer end sloping 1½ to 1, an inner block, 20 b feet, and an outer block 25 by 40 feet, on top, with openings or spans of 17½ fee tween the blocks, and between the inner block and the stone abutment. The bl are constructed of round native timber. and the outer faces of the outer block close-sheathed.

The outer end of the wharf, is 21 feet high, the top is 5 feet above high w springs, and the depth of water at the outer end, at low water, is 11 feet. Spring rise 5 feet.

During 1903-4, the sum of $99.34 was expended in constructing a warehous the outer end of the wharf. The building is 16 feet in length, 10 feet in width, 7 feet in height of post; it has a 1½-inch spruce flooring, one door 6 feet wide a small window at the end, and the roof is covered with cedar shingles.

The total expenditure to June 30, 1904, is $3,254.15.

BAILEY'S BROOK.

Bailey's brook, Lismore, Pictou county, is a large stream emptying into Stra Northumberland, at a point about ten miles to the eastward of the entrance to M gomish harbour, and six miles to the westward of Arisaig.

The sum of $2,000 was voted for expenditure during 1902-3, towards the ope of a permanent channel through the beach at the mouth of the brook, to permit b to enter it for shelter, and for the construction of channel protection works on outside.

PAPER No. 19

rks proposed to effect the improvements consist in cutting a channel through bout 290 feet in length and 30 feet wide in the bottom, with a depth of 2 water spring tides, or 6½ feet at high water ; the construction of a shear western side of the channel, 130 feet in length and 12 feet wide, founded r, and protected with sheet piling on the channel face and outer end ; and ction of a breakwater on the Carleton side of the channel, 240 feet in 20 feet wide on top, constructed of round timber cribwork and extending eet at low water, to prevent the sand from closing in, and to serve at the s a boat landing.

ount voted for expenditure during 1903-04, was expended in procuring timber required for the construction of the protection works.

the year ended June 30, 1904, out of the amount voted for expenditure, the sum of $2,742.48 was expended in the construction of the breakwater rn side of the entrance, and in the excavation of the channel above referred he construction of the dam still to be done, to complete the proposed im-

xpenditure to June 30, 1904, $4,742.41.

BAYFIELD.

l, Antigonish county, is on the south coast of St. George's bay, eight miles ntigonish harbour, and fifteen miles west from the entrance to the Strait e harbour being formed by Pomquet island and outlying reefs.

et island is about three-quarters of a mile long, and is separated from Pom- on the mainland, by a strait 1,850 feet wide, with a depth of 4 feet at low channel 400 feet wide.

—In 1857, the construction of a wharf was commenced by a joint stock the west side of the harbour, a quarter of a mile south from Pomquet vas handed over to the provincial government and completed in 1887 ; it and span structure 402 feet in length, extending to 9 feet at extreme low 887-88 the two outer and adjoining blocks were raised, repaired and close- central block and the shore block were cut down to low water ; and a con- k was constructed between the outer blocks and the shore.

great gale of December 1, 1890, the work was carried away down to from low water at the outer end, to 3 feet above low water at a point 112 feet ner end.

-93 a contract was entered into for the construction of a new wharf. The contract was completed, and the approach to it was improved by one of the l dredges, in 1893-94.

v wharf is 442 feet in length, including 33 feet of rubble masonry, 319 feet d span open-faced cribwork 25 feet wide, and 90 feet of close-faced crib- blocks each 60 by 30 feet, placed at right angles. The substructure of ed cribwork and of the outer close-faced cribwork is of creosoted North llow pine, and the superstructure of native timber. The depth at extreme t the outer end is 11 feet. Spring tides rise 4 feet.

ts completion, the blocks of both open and close-faced work have settled , principally on the northern side.

and June, 1896, the sum of $348.37 was expended in levelling up 127 feet and span work and in slight repairs to the covering between the outer blocks.

the fiscal year 1903-4, the sum of $3,074.57 was expended in raising and e outer end and in renewing the stringers, covering the cap-timbers over ructure.

ater.—A breakwater 400 feet in length was constructed at Pomquet Point extended on a further length of 310 feet in 1888. The work consisted of

a cribwork core 18 feet in average width, covered with stone sloping on the s side three to one, and on the inner side one and one-half to one. It continued turbed until the occurrence of the great gale of December 1, 1890, when th covering was stripped off nearly to high water level, to within 160 feet of the in

During the years 1892-93, and 1895-96, the breakwater was repaired and ex The work done included an extension 70 feet in length, with an 'L,' or return outer end 40 feet in length.

In the year 1897-98 the sum of $999.73 was expended in reconstructing th covering of the breakwater in places where it had been disturbed. About 4,00 ficial feet of the top was reconstructed with 263 cubic yards of large stone, 16 yards of which was old stone displaced and 200 cubic yards of new stone brou mile to the public wharf, thence by scow a quarter of a mile to the breakwat

With the exception of some disturbance of the stone covering and of the d ment of some of the stones forming the covering at the outer end, the breakw mained in fairly good condition until December 5, 1902, when it sustained damage during a northerly gale, accompanied by an exceptionally high tid covering stones were carried away for a length of 458 feet (184 to 642 feet fr inner end) down to the top of the cribwork, or to within about 1½ feet of high water, and deposited over the inner slope; and the covering stones from from the inner end, outwards were more or less disturbed. The repairs prop cluded the construction of a concrete wall 525 feet in length over the seaward the cribwork (150 to 525 feet from the inner end) and the replacing of the ston ing.

During the fiscal year 1903-04, the sum of $6,789.83 was expended in pr and storing 800 barrels of cement and some other materials, and in the cons of 30 lineal feet of concrete wall.

BENOIT COVE.

Benoit Cove, Antigonish county, it situated on the southern shore of St. bay, about two miles to the eastward of Harbour Aux Bouches.

The Cove, so-called, is only a slight depression in the coast line, and is the fishermen of the district for a landing; but as the beach between high water was strewn with boulders, it was at times dangerous to make a landi boats, the sum of $800 was voted for expenditure during 1903-04, for the impr of the landing by the removal of the boulders.

Out of the amount voted, the sum of $799.91 was expended in the rem blasting of some 120 boulders, of from 1 to 3 cubic yards in size, off the beach high and low water, a distance of about 200 feet, and in constructing with t removed, a rough breakwater at the western end of the clean beach, 120 length, and extending out 5 feet at low water.

BIG HARBOUR.

Big harbour, or Port Bévis, Victoria county, is on the northern side of t Bras d'Or channel, about fifteen miles to the westward of its entrance into the

Plans and specifications for the proposed work were prepared, and on 1904, a contract for the construction of the wharf was entered into for the $3,875.

The work under contract is a block and span structure, with creosoted tim structure, extending into 13 feet at low water, 81 feet in length, measured on tre line, and 20 feet wide, with an 'L' on the eastern side of the outer end, feet, and a road approach from the wharf to the public road, 113 feet in lengt centre line. The wharf consists of a shore abutment 11 feet long, of an inn 20 feet long, and of an outer block 20 by 40 feet, with openings or spans

15 feet in length. The blocks are to be constructed of round timber, fully bal- protected by fenders on all faces, and with close-sheathing around the outer

t the close of the fiscal year the work had not been started.

BIG POND.

g Pond, Cape Breton county, is on the south side of East bay, the eastern arm Great Bras d'Or lake, about thirteen miles from the head of the bay, and -five miles from the city of Sydney.

g Pond is so called on account of the existence here of a large sheet of water, ted from the bay by a beach.

uring 1874-5, a cut was made through the beach, from the bay into the pond, s sides protected with cribwork, but there being no large streams discharging ie pond, the slight rise and fall of the tide (about 1 foot) did not produce suffi- cour to keep the opening clear, and it soon filled up with sand.

block and span wharf, 260 feet in length, was constructed by the department 1887-88-89, but being constructed entirely with native timber, in a few years it stroyed by the teredo, the outer end was carried away by ice, and it was decided ndon it.

1899, a report was submitted on the construction of a new wharf. Two sites examined, and estimates were given for the cost of a wharf on each site ; but to diversity of opinion among the parties interested as to the proper site, a on was not arrived at until January, 1903.

n March 27, plans and specifications for the construction of a wharf on the east- e, were submitted, and on January 12, 1904, a contract was entered into for the for the sum of $7,720.

he work under contract consisted in the constructtion of a block and span wharf, ing into 11 feet at low water, together with a road, 223 feet in length, to con- with the public road. The wharf to be 254 feet in length and 20 feet wide on ith an 'L' on the northeastern side of the outer end, 28 feet long and 24 feet and consisting of a shore abutment, 50 feet long, of 4 blocks 20 feet long, and of er block 24 by 48 feet, with openings or spans between them 18 feet in length. outment and the blocks to be constructed of round timber, with creosoted timber ucture, fully ballasted, fendered, and the faces of the two outer blocks, protected lose-sheathing.

t the close of the fiscal year 1903-04, the work of construction had just been d ; but there was not work enough done to give the contractor an estimate.

he wharf and approach thereto were since completed in a satisfactory manner on er 8, 1904. The expenditure, in calling for tenders, &c., was $154.47.

BOULARDERIE CENTRE.

oularderie Centre, Victoria county, is on the southern side of the Great Bras channel, about eight miles to the westward of its entrance into the Atlantic and ten miles to the eastward of its entrance into the little Bras d'Or lake.

n April 25, 1901, a contract was entered into for the construction of a wharf was completed on June 30, 1902.

he wharf is 164 feet in length and 20 feet wide, with an 'L' at the outer end, 20 feet, and consists of an approach of stone, clay and gravel ; 10 feet long, of a ork abutment 30 feet long ; of two cribwork blocks 20 by 20 feet, and of an block 24 by 40 feet, with 20 feet openings between the blocks, spanned and ed. The abutment and the blocks, constructed of round timber, are creosoted the level of high water, fully ballasted and fendered, and the two outer blocks rotected by close-sheathing.

The depth at low water along the channel face is 13 feet. Spring tides rise 2

During the year 1902-03, the sum of $130.12 was expended in opening a porary road 2,100 feet in length, from the wharf to the public road. During the year ended June 30, 1904, the road was completed at a cost of $669.98.

Total expenditure to June 30, 1904, is $5,760.56.

BRETON COVE.

Breton Cove, Victoria county, is situated on the north-eastern shore of the isl of Cape Breton, about midway between St. Ann's harbour and Ingonish.

The sum of $4,600 was voted for expenditure during 1903-04, towards the struction of a wharf to serve the purposes of a boat landing, and to afford shelte fishing boats.

Plans and specifications for the work proposed were prepared, but the cont for their construction was not entered into until July 18, 1904.

The work under contract is a continuous cribwork structure with creosoted ti substructure, extending to 4 feet at low water spring tides, 194 feet in length 16 feet wide, on top, with an 'L' on the western side of the outer end, 24 by 20 to top, and an inclined landing, built on creosoted timber piles, 6 feet wide and 46 long, off the inner face.

Spring tides rise here 4 feet.

The expenditure incurred in calling for tenders, &c., was $299.23.

CARIBOU ISLAND.

Caribou Island, Pictou county, is on the Northumberland Strait, five miles to westward of the entrance to Pictou harbour.

Caribou harbour, sheltered by Caribou island and a smaller island to the seav of it, is eight miles in length and one mile in average width. The principal entra between the two islands, has a depth of only 4 feet at extreme low water, and the between the mainland and the western extremity of Caribou island are dry at extr low water, except in a few small channels. Spring tides rise 6 feet, neaps 4 feet.

A causeway of brush and stone, 1,330 feet in length and 18 feet in width, betv the mainland and the western extremity of the island, commenced in 1890-91, after the completion of work undertaken in 1894-95, built up to the level of ordinary high water over 560 feet of its length, and about 1½ feet below that level the remaining 770 feet. In 1897 a breach was made through the work near its wes extremity, where the bottom was scoured to a depth of about 4 feet at low water, the top of the low portion, 560 to 1,300 feet from the west end, was distributed in s places. In 1900-01 and 1901-02 the breaches in the brush and stonework were fille and the work raised to about the level of the ordinary high water.

In 1902-03 the sum of $650.06 was expended in continuing the raising of brush and stonework which was brought up to an average of about 1½ feet a extreme high water.

During the fiscal year 1903-04 the sum of $1,552.07 was expended in raising brush and stonework where settlement had taken place and in placing quarried st on the seaward side.

The total expenditure to June 30, 1904, is $5,454.54.

CHEBOGUE HARBOUR.

Chebogue harbour, is situated about seven miles south of the town of Yarm near its mouth, and surrounded by Fox island, Veal island, Jacko island and Sh liff point, is a small but well sheltered anchorage and roadstead, which affords s ter to a considerable number of fishing vessels and other small crafts engaged in

g and general trade. The anchorage is partly protected from the south by Fox is-nd, but its western portion, which is mostly dry at low water, and much used at or ar high water by boats plying between Chebogue point and other ports, and by other aft, is guarded by a gravel bar or beach. This beach is some 800 feet long, about feet wide from high water to high water and 4 to 5 feet above high water ordinary ring tides. To preserve the beach, and the anchorage north of it, the department in 00-01, at a cost of $1,798.34 built 360 feet in length of beach protection work. The ibwork is 8½ feet high 8 feet wide on top, plumb on the beach or shoreward side, bat-ring 1 in 4 on the back or harbour side, and substantially built of round-logs, well lted, fendered, filled with ballast, and covered with 3-inch plank.

In 1901-02, the sum of $1,311.79 was expended in extending the beach protec-n work built the previous year. The extension is 243 feet long, 9½ feet in mean dth, 8½ feet high, strongly built of round-log cribwork, well fendered, filled with bal-st and covered with 3-inch plank. The whole work, which is doing excellent service the protection of the roadstead is now 603 feet in total length.

In 1903-04, the department expended the sum of $67.77 in finishing, with plank vering and fenders, the outer 80 feet in length of the beach protection work built in 00-02.

CHEGGOGIN.

Cheggogin, Yarmouth county is a small fishing and farming village with a popu-ion of a couple of hundred people, situated on the Bay of Fundy coast, about five les north of Yarmouth. The little bay of the same name is one-third of a mile deep rth and south, and about the same east and west, fully exposed to the south-west, t sheltered from every other quarter. It is dry at low tide, but at high water has a pth of from 12 to 14 feet.

Over half a century ago a breakwater was built by the proprietors of the marsh, a position immediately west of the present work. It was totally destroyed about enty years ago, not a vestige of it being now visible.

In the winter of 1895-6, the inhabitants aided by a grant of $45 from the muni-al council, built a small breakwater 80 feet long 12½ feet wide, and from 6 to 11 feet gh, on the south side of the stream's outlet. In 1899-1900, the sum of $596.12 was pended in lengthening the breakwater by the addition of a new block 60 feet long, feet wide, and from 10 to 13 feet high. It is cheaply but substantially built of und-log cribwork of the usual type. In 1900-01, the breakwater was further extended ength of 51 feet at a cost of $692.21. The new block is 11 feet wide on top, with le batters of 1 in 12, and from 12 to 13 feet high. In addition to the examination, a ece of the shoreward end of the work was rebuilt, 30 feet long, 8 feet wide, and from o 9 feet high, at a cost of $88.03.

In 1902-03, the sum of $76.58 was expended in raising the shore end of the break-ter a height of from 2 to 3 feet, for the purpose of preventing the gravel and sand m washing over and filling up the mouth of the stream where the fishermen keep ir boats.

In 1903-04 the sum of $188.67 was expended in the purchase and delivery of timber the further extension of the breakwater.

Spring tides rise 16 feet, neaps 13 feet. Total expenditure to June 30, 1904, is 643.61.

CHETICAMP POINT.

Cheticamp Point, Inverness county, is the southern extremity of Cheticamp island, out one mile to the eastward of a beach of shingle closing the south end of Cheti-mp harbour, which lies between the island and the mainland, and is entered m the north.

A contract was entered into on July 16, 1903, for the constructin of a wha tending to 5 feet at extreme low water, for the sum of $13,880.

The work according to contract is to be 370 feet in length and 20 feet in and to consist of 20 feet of stone embankment, 80 feet of stone abutment, and 2 of cribwork with creosoted substructure.

At the close of the year ended June 30, 1904, the approach (embankment and abutment) was completed with the exception of the cap-timbers.

The work under contract has since been completed September 23, 1904.

The expenditure during the fiscal year was $1,223.49.

CHEVERIE.

The village of Cheverie, Hants county, with a population of about 350, i ated on the right or east bank of the estuary of the river Avon, where it deb into the Basin of Minas, some fifteen miles north of Windsor, the county tow is a good farming district, but the principal trade of the place is the quarryi shipment of gypsum to the United States.

The quantity, which varies according to the price ruling in the American m ranges from 20,000 to 60,000 tons per annum. A wharf, about 100 feet lon built here many years ago by the provincial government. In 1873-74, the Depa of Public Works lengthened it 70 feet, at a cost of $2,338.88; this extension be open round-log cribwork, like the old work. In 1882, a further extension of 1 was built at a cost of $5,000. This piece of work is of square timber, close-fa feet high and 25 feet wide on top, the same width as the former, and the sides 1 in 12. In 1885, the sum of $600 was expended in effecting some much-nee pairs to the shoreward side of the wharf. In 1884, the department built a de breakwater 300 feet distant from the outer end of the wharf for the purpose tecting the latter from the northerly seas, to which it was exposed. This piece o consists of solid cribwork, 130 feet long, 20 feet wide on top, 35 feet wide at ba about 23 feet high, built of square timber and close-faced on all sides. The s side to the height of 10 feet below high water of spring tides has a slope of one, the sloping face being covered with 6-inch plank. The block is provide mooring posts to assist vessels coming to berth at the wharf, as well as with rin and ladders.

In 1887-88, the sum of $500, and in 1896-97, the sum of $100, was expen extensive repairs. On the outer 100 feet in length the flooring, guards, and s the fenders were renewed; on the 80 feet the guards and 3 fenders were renew the next 105 feet the work received new ties, stringers, guards, flooring and fe on the next 60 feet shorewards most of the flooring was renewd, 205 feet in le the wharf included in the above lengths, was raised in height from 1 to 3 fe all, 69 new fenders were placed and 250 tons of new ballast was put in.

In the fiscal year ending June 30, 1902, the sum of $768.23 was expended purchase of timber for the extension of the detached breakwater built in 1884, scribed above.

In 1902-03, the sum of $2,999.34 was expended in the construction of an sion to the detached breakwater. The new block is 100 feet long, 23 wide on feet high, battering on the landward side 1 in 4, and plumb on the seaward fac a break 5 feet high. It is substantially built of stone-filled cribwork and sheathed on the seaward side.

In 1903-4, the sum of $1,486.39 was expended in completing the work.

Spring tides rise 40 feet, neaps 36 feet.

CHURCH POINT.

Church Point, Digby county, is situated on the southeast side of St. Mary's Bay, iles southwest from Weymouth. It has a population of 200 people, engaged in fish- and farming.

The works, which consist of a wharf, a retaining wall and breakwater, appear to e been built between the years 1856 and 1866, at the joint expense of the provincial ernment and the inhabitants, the expenditure of the government having been 55.66.

In 1875-6, the department expended the sum of $2,000, the inhabitants contribut- an equal amount, in repairing the northern face and in building an L, 72 feet long 0 feet wide at right angles to it, with the object of preventing gravel from work- around the outer end. The movement of gravel, which is from south to north, been always more or less a difficulty and detriment to this port. In 1890-91, the el having worked around the outer end of the breakwater and formed a bar across entrance to the loading berth, projecting at right angles from the outer or north- corner of the breakwater. The groyne was extended in 1894-95 a further dis- e of 30 feet, and in 1896-97, it was again extended by a length of 120 feet and h of 16 to 25 feet by a height of 10 to 22 feet, all of round-log cribwork. The e gates at the head of the lock, where the fresh stream makes its exit, were re- t in order to cause the stream to scour away the gravel from alongside the wharf.

In 1900-01, the sum of $800 was expended in rebuilding 63 feet in length of the rf front, 16 feet high and from 10 to 20 feet wide, 35 feet of this length being e-piled. The sluice-way was entirely rebuilt and fitted with double lifting gates ead of single; the floor of the sluice was lowered 5 feet, and an apron extending feet up-stream and 50 feet down-stream, was constructed of 3-inch plank, well ed to heavy stringers, bedded in close-packed stone, and close-piled at both ends revent scour.

In 1902-03 the sum of $1,800 was expended in rebuilding 134 feet in length of the rf wall. The new piece is 15 feet wide at bottom, 18 feet wide at top and 20 feet , solidly built of stone-filled cribwork.

In 1903-04, the sum of $2,995.21 was expended in the further reconstruction of the rf wall begun in 1902-03. The length of the work built this year is 158 feet, its ht from 19 to 21 feet and its width from 8 to 13 feet.

The total expenditure to June 30, 1904, is $15,353.02, including a refund of $1,692 he provincial government in 1887-88. This work was transferred to the control he Marine and Fisheries in June, 1888.

Spring tides rise about 22 feet.

COW BAY.

Cow Bay, Halifax county, is situated at the mouth of Halifax harbour on Atlantic coast, about two miles east of Devil island. It is a broad bay formed by rrow strip of beach, about a mile in length, separating the Atlantic from a fresh r lake having an area of about one and a quarter square miles. The outlet of the , which is a small brook flowing through the beach, is used by the fishermen of locality for the purpose of taking their boats into the lake for shelter in stormy her. The action of the seas have, however, many times caused the outlet to fill ith gravel, flooding the shores of the lake and making access thereto impracticable. avy freshet in the early spring of 1902 swept the gravel out of the outlet and en- ed it to greater dimensions than it hitherto had. To maintain the usefulness of outlet, the department during the fiscal year of 1903-04 expended the sum of 3.94 in the purchase and delivery of timber for the purpose of constructing a tantial breakwater.

COW BAY (PORT MORIEN).

Cow Bay (Port Morien), Cape Breton county, is on the eastern coast Breton island, about eighteen miles to the eastward of the entrance to Sydney

A breakwater, built by the owners of the Gowrie Coal Mine on the nort the bay, came under the charge of the department in 1873. It originally 1,374 feet to 17 feet at low, or to 23 feet at high water, and was about 4 width. The area of the basin inclosed between it and the shipping pier of th mines, now the property of the Dominion Coal Company, was 17 acres, 10 which had a depth of from 9 to 17 feet at low water.

The breakwater was seriously damaged during the great gale of August Extensive repairs and improvements were made nearly every year up to 1 the breakwater consisted of 220 feet of old work protected on the seaward beach of shingle and boulders, 360 feet of old work 44 feet in width, with a r face work and a break on the seaward side built over the remains of the o and 793 feet of inner work with counterforts connecting outer face works. and outer face works were from 30 to 20 feet apart ; they were connected by and the spaces were filled with earth and stone ballast.

In 1895 and 1896, 260 feet of breakwater (1,114 feet from the shore end was carried away down to from 2 to 6½ feet below low water; the outer face-w 1,114 feet from the shore end inward were badly damaged, and ballast was over the works and deposited in the dock along the inner face from 581 feet feet from the shore end.

Between the years 1897 and 1901 a large amount was expended in repa strengthening the breakwater from 1,114 feet from the shore end inward. works were repaired and strengthened by filling in the face chambers to a tide level with concrete and by close-piling ; the stringers and covering of work from 581 feet to 1,114 feet from the shore end were renewed, and the placing a talus of concrete blocks on the seaward side was commenced.

During the year 1902-03 the sum of $10,005 was expended in repai strengthening the breakwater, the new work including the reconstruction o of outer face work 24 feet in width and 15 feet in average height, of which face chambers were filled with concrete and the outer face close-piled ; a reconstruction, to within one foot four inches of the top, of part of outer en in length, 24 feet in width and 15½ feet in average height, which remain completed and to have the outer face chambers filled with concrete and the o close piled.

During the fiscal year 1903-04, the sum of $21,266.79, was expended in ing the work of repairing and strengthening the breakwater in progress in The work performed included : the completion of the block 49 x 24 fe outer end of outer face works and its extension to form a block 49 feet which the outer face chambers are filled with concrete and the outer faces cl in constructing 218 feet of new face work, 9 feet wide and 11 feet in heig of the old outer face work 226 to 444 feet from the inner end, and in fillin concrete over 109 feet from its outer end inwards ; in reconstructing, fi chambers with concrete and close-piling 112 feet of outer face work from counterfort (600 feet from the inner end) outwards ; and in levelling up a ing with concrete, the space between the inner and outer works from 600 the inner end outwards.

The total expenditure to June 30, 1904, including $25,000 for purchase water, amounted to $252,877.28.

D'ESCOUSSE.

D'Escousse, Richmond county, is a thickly settled district on the no coast of Madame island, and on the southern side of the entrance into Le

strait separating the Island of Madame from Cape Breton island. and con- St. Peter's bay with the Strait of Canso.

harbour is formed by outlying islands and connecting beaches, the entrance the eastward, through a narrow channel, obstructed by a 'bar' with 10 feet vater. It is about three-quarters of a mile in length and one-third in width, epth of about 21 feet at low water spring tides which rise 6 feet.

March 23, 1903, a contract was entered into, in the sum of $4,388, for the tion of a public wharf and warehouse. The work of construction was com- on July 27, and was brought to a satisfactory completion on November

wharf is a pile structure, with creosoted timber bearing piles beyond the line vater, and extends to 12 feet at low water ; it is 307 feet in length and 22 feet th an L on the western side of the outer end 22 x 22 feet. The warehouse is ted on a pile foundation, on the eastern side of the inner end of the wharf and et long x 20 feet wide, with 10 foot posts. The sides and roof are boarded, and painted. The floor is laid double, the building has four windows, and a ding door.

DEVIL ISLAND.

il Island, Halifax county, is a small low island about 2,000 feet in length by de, with its highest point about 15 feet above high water springs, situated ght miles to the south-east of the city of Halifax, and one-third of a mile from nland off Hartland Point, to which it is connected by a reef, covered with three sand, and having three feet of water over it at low tide. The island is perma- nhabited by about one hundred people, wholly dependent upon fishing for their od.

1892, a breakwater 300 feet in length, 15 feet in width, with an L at the outer feet in length, at which there is a depth of 5 feet at low water spring tides, was ted at a cost of $1,941.18.

September, 1893, the sum of $87.96 was expended in close-sheathing 100 feet in of the western or seaward face of the breakwater, in order to prevent the sea ashing the gravel under the ballast floor and obstructing the berths for boats astern side. The sheathing is of round spars, flatted on three sides, to a thick- 6 to 8 inches, and well secured to the longitudinal face timbers with iron bolts, uarters of an inch in diameter.

1899-1900, the sum of $97.13 was expended in petty repairs, rendered necessary age done by a severe storm March, 1, 1900. The work done comprised b.m. of new planking, about a dozen new fenders, a short piece of new guard nd thirty tons of ballast.

1903-04, the sum of $252.55, was expended in repairs and improvements. Of n $149.68 was expended in filling the spaces between the face-logs with new f timber, rendered necessary by the eating away of the old timbers by the lim- The outer end was also reballasted. The remaining $100 was expended in a small wing or break on the western side of the shore end of the breakwater nt the gravel from washing in past the shore end of the work; the new block t long, 10 feet wide and 7 feet high, well and strongly built of round-log crib- ed with stone.

ing tides rise 6 feet, neaps 5 feet.

DIGBY.

by, the shire town of the county of Digby, with a population of about 1,500, ifully situated on the south-western end of Annapolis basin. It is an impor- tion on the Dominion Atlantic Railway, sixty-seven miles north of Yarmouth,

one hundred and fifty miles from Halifax, twenty miles from Annapolis, and the port of call for the daily steamer of the Dominion Atlantic Railway, ply tween Digby and St. John. The harbour is open at all seasons, and well p from nearly all quarters; storms, however, from the north and north-east drive sea against the pier, and if at such times there be much drift ice in the ba structure is likely to suffer damage.

The first pier was built by the government of Nova Scotia some years bef federation, and was nearly destroyed by the gales which swept the Bay of F 1866-7. In 1869 to aid in rebuilding the work, the sum of $2,920 was granted liament and transferred to be expended by the provincial government. The then built, was of pile-work 12 feet apart for 550 feet, next a block of cribwork long, 45 feet wide, the southern half of it sloped so as to form an incline rend cessary by the great rise and fall of the tide (26 feet at spring). The incl finished by a block 170 feet long by 22 feet wide, the northern half of this po the pier being all pile-bents, 8 feet apart. The outer end of the pier consist block 56 feet long, 45 feet wide and about 40 feet high. The whole of the n face was close-piled, the total length of the structure being 870 feet.

In 1872, the sum of $1,650 was expended by the department in completing pairing the pier. In 1874 a number of piles and braces were renewed, the out newly fendered, and new joists and plankings laid for the whole length at a $2,500. During the gale of February 22, 1879, a schooner loaded with produce West Indies, parted her cable and was swept bodily through the pier, carryin a length of 130 feet, which was rebuilt at a cost of $2,367.73.

In 1881-2, the sum of $888.57 was expended in repairing a few piles an timbers that had been eaten away by the limnoria.

In December, 1885, the outer end of the pier was destroyed by a severe g in 1885-6, the sum of $1,945.62 was expended in repairs.

In 1886-7, a further sum of $767.62 was spent on the same repairs.

In 1887-8, the sum of $7,467.68 was expended on the construction of 40 x 40 feet, on the site of the displaced outer block ; of an inclined landing wide and 8 feet long between the new outer block and the undestroyed inner of the pier and the building of a roadway on pile and frame bents, connect whole work with the new outer block. In January, 1888, operations were be wards building the pier to its original length, and the departmental report year 1888-9 shows an expenditure of $4,498.14. The same work consisted o block 45 feet by 45 feet to replace the former one. It is built of round timb double sets of face-logs, and is fully ballasted; it is 45 feet high, and connect the older portions of the work by a cribwork inclined landing, over the top o a deck wharf is carried on heavy framed bents. The inclined landing and it structure is 25 feet wide. The in-shore or pile-work section was strengthen repaired in places, and parts of the worn and decayed planking were renew 1889-90, heavy piles were driven along the northern and southern sides of the block, which was shifted and damaged by a storm in December, 1885, to prev further movement.

In 1890-1, and again in 1891-2, small expenditures were made in general

In 1890, a contract was entered into for the construction of a landing pi new site, viz.: on the north side of the 'Racquet,' about a mile to the north the present pier, and the town of Digby. For this purpose a quantity of timb iron had been procured by the contractor. Owing, however, to numerous dela the death of the contractor. the intention of building this new pier was aba and it was decided instead to repair and reconstruct the present pier, utili much as possible, the timber and iron belonging to the estate of the deceased c tor. The work of reconstruction was carried out by days' labour at a cost 248.15.

ONAL PAPER No. 19

n April, 1894, a length of 330 feet of close-piling along the north side of the ogether with the caps and walings for the same distance, and about ninety of tside bearing and fender piles, were destroyed by a violent gale. In order to save lance of the structure from the scouring action of the under-tow, set up by the piling, the rest of it was immediately cut out, and the sheet piling and other r that had been knocked adrift was saved, and piled up on the inner wharf. quently in May and June, 1894, the sum of $1,410.03 was expended in making the damage done by the April storm. The sheet piling having proved a mis- it was not replaced, but about ninety new heavy piles driven and thoroughly l and bolted.

n 1895-6, the sum of $4,341.99 was applied in filling with substantial close-piled work, a space or recess on the north side of the pier, near its outer end, 210 ng by an average width of 17 feet, and in raising from 2 to 3 feet, and renew- e entire floor of the outer 225 feet in length.

n 1896-7 the sum of $3,132.89 was applied to the reconstruction of the southern f the shore end of the pier for a length of 450 feet, in substantial pile-work. ew work was covered with 6-inch plank, and securely capped, fendered and l. In the year 1898-9 the sum of $579.80 was expended in the renewal and repair outer south corner of the pier, which was damaged by being struck by the nion Atlantic steamship 'Prince Rupert' during the southeast blow in April, In addition to this, 40 feet in length of the inclined slip was replanked with plank and a couple of new fenders were bolted into position.

n 1900-1, the sum of $2,000 was expended in necessary renewals. The work done ted in replanking the wide part of the inclined slip, 125 feet long by 25 feet wide. rrow part 87 feet long by 17 feet wide, and a portion of the floor of the main 18 by 22 feet, with six-inch spruce deals.

n addition to this, an open shed, 100 feet long by 33 feet 6 inches wide, was d at the outer end of the present shed and office and over the inclined slip, to t freight when landed from steamers.

he importance of this pier may be judged by the fact that the collection for age dues now amount to nearly $3,000 per annum.

n 1901-02, the sum of $3,300 was expended in repairs and improvements. ld freight shed was moved 100 feet up the pier and raised 4 feet in height. Ad- g it outwardly there was built a new shed 202 feet long, the upper 100 feet in being built with the floor on a level with a boxcar, and the lower 102 feet level he floor of the pier. A portion of the pier floor was also renewed. The arrange- is now most satisfactory and convenient for the handling of freight.

n 1902-03, the sum of $3,697.77 was expended in rebuilding the lower 60 feet in of the inclined slip. Owing to this portion of the work, which was of crib- being very much injured by the limnoria, the new portion was built of pilework, les being driven through the ballast cribs. It was difficult and expensive work. lition to this, a considerable portion of 6-inch plank on the shoreward end of the as renewed, and a number of the long hardwood fenders that had been broken daily steamer from St. John, were renewed.

n 1903-04, the sum of $313.15 was expended in renewing the hardwood fenders, ng a stairway from the main dock to the inclined slip, and putting new eaves, s, down spouts and a few other petty miscellaneous repairs to the freight sheds. he total expenditure to June 30, 1903, is $79,586.34, including a refund of $11,- o the provincial government in 1887-88, and not including an expenditure of .02 in dredging.

pring tides rise 24 feet, neaps about 20 feet.

his work was transferred to the control of the Department of Marine and Fish- on June 12, 1888.

feet in length at a cost of $1,000. The whole structure was substantially b round-log cribwork, well ballasted and double fendered. Its average height is 18 feet and at the outer end, at high water ordinary spring tides, there is ab feet of water.

In 1895-96, the sum of $159.45 was expended in laying new plank flooring f feet in length of the shoreward portion, and putting in some new fenders on th block.

Spring tides rise 46 feet, neaps 39 feet.

Owing to the mud-flats in the cove, where the present wharf was built, gr filling up with mud, this wharf has become almost useless owing to the reduced of water to be found at it, and in 1903-04 the sum of $2,079.11 was expended in b a new pile-wharf at the mouth of the little creek or brook about one-quarter mi of the old wharf. The new structure is of pile-work; it is 200 feet long, 25 fee with an L on the outer end giving a face length of 45 feet and depth of water water ordinary spring tides of 16 feet.

Spring tides rise 48 feet, neaps 42 feet.

FINLAY POINT.

Finlay Point, Inverness county, is on the west coast of Cape Breton island miles north of the entrance to Mabou Harbour.

In 1902-3, the sum of $529.78 was expended in procuring all the timber, w exception of floor-stringers, covering and guard rails, and nearly all the iron r for the construction of a proposed wharf.

Duing the fiscal year 1903-4, the sum of $1,466.22 was expended in procur balance of materials required and in nearly completing a wharf of crib-work in width, on top, extending from low water 146 feet to 3 feet at low water, approach of brush and stone 170 feet long. At the end of the year the cribwo complete, with the exception of the fenders, covering and guard rails over a le 82 feet from the inner end, the brush and stonework was approaching com Spring tides rise 4 feet.

FIVE ISLANDS.

The village of Five Islands is situated on the north shore of the Basin of at the extreme western end of Colchester county, 15 miles east of Parrsboro'. settlement is some three miles long, and includes that portion of the shore basin between East river and Harrington's river, the latter forming the bound between Colchester and Cumberland counties. The total population is from 30 and the exports consist of deals, lumber, cordwood, potatoes and fish. Formerl was a considerable export trade in barytes, but owing to the low price of this in the American market, the mines have been closed for the last 15 or 16 years 20 to 30 coasting schooners load here annually.

In the year 1884, the department built a public wharf at a cost of $2,500 upper or east end of the settlement, in the mouth of the East river. It is long, 40 feet wide and 28 feet high at the outer end, where at high water o spring tides, there is 25 feet of water. The work is of the ordinary type of ro stone-filled, cribwork. The sides batter 1 in 12 are double-fendered.

In 1893-94, the sum of $370.38 was expended in renewing the floor, in stringers and guard timbers, the raising of the outer end about 2 feet and t struction of an inclined ramp in the end of the wharf for the purpose of loadi on to the decks of schooners lying dry at low water.

In 1903-04, the sum of $699.97 was expended in renewing the whole top wharf, including planking, guards, stringers and fenders. The approach was gravelled.

Spring tides rise 48 feet, neaps 40 feet.

NAL PAPER No. 19

FORT LAWRENCE.

rt Lawrence, Cumberland county, is situated on the mouth of the La Planche nd was formerly the proposed terminal of the Chignecto Ship Railway. It is miles west of the town of Amherst, and is the nearest approach to navigable for that town. On June 2, 1903, a contract was let to Messrs. Lyons & White, wa, for the construction of a wharf at this place, for the sum of $14,895.

e structure will consist of a section of pile trestle work 300 feet long, 50 feet nd 43 feet high, along the outer face, to be built parallel to the bank of the ith an approach, also of pile work, of an average length of 210 feet, 36 feet nd of an average height of 26 feet. The available depth along the outer face 37 feet at high water ordinary spring tides.

ring tides rise 45 feet, neaps 33 feet.

the end of the fiscal year 1903-04, about 120 feet in length of the work had nstructed. The amount expended was $3,769.25.

FRIAR'S HEAD.

ar's Head, Inverness county, is on the west coast of Cape Breton Island, 6 the northward of the entrance to Margaree Harbour.

1900-01, the sum of $494.50 was expended in procuring part of the materials d for the construction of a breakwater, designed to close an opening in a ledge lying parallel to the shore, at a fishing station near Friar's Head, with a view ding partial shelter to a small wharf and the anchorage for boats. The work d included a concrete wall 90 feet in length, 4 feet in width on top, and 8 feet ht, from 1 foot above low water, with a talus of large stone on the seaward ping 2 to 1 from the top of the wall. In 1901-02, the sum of $1,097.81 was d in constructing about three-fifths of the concrete wall and one-half the talus, procuring part of the cement required to complete the work.

1902-03, the sum of $629.96 was expended in completing the work with the ex- of 3 cubic yards of concrete in the west end of the wall, and the talus. The otainable for the talus was too light to withstand the sea. Those placed in were carried away.

ring the fiscal year 1903-04, the sum of $578.96 was expended in extending the wall 13 feet at its west end, and in constructing a wall of concrete 4 feet in and 4 feet in width on its seaward side, to prevent undermining.

al expenditure to June 30, 1904, is $2,801.25.

FRUID'S POINT.

uid's Point, Shelbourne county, is situated on the west side and near the head ged Island bay, about three and a half miles northeast of Lockeport. From ort to Sable river, a distance of about 10 miles, there is a continuous settle- most without wharf facilities, and to accommodate these people a wharf was cted here during the fiscal year 1903-4 at a cost of $4,425.20. It will be much the shipment of logs, lumber, farm produce and by the many fishermen of lity.

consists of two parts, an approach of stone 105 feet in length, 24 feet wide on 8 feet high at its outer end, and an alternate block and span wharf 120 feet th 20 feet wide, with a height of 18 feet at its outer end. There are 3 spans feet in the clear, and 3 cribwork blocks each 22 feet in length. The cribs are cted of round-logs well ballasted and fendered, the floor of the wharf is 4 feet igh water ordinary spring tides.

ring tides rise here 7½ feet and neap 5 feet.

GABARUS.

Gabarus bay, on the Atlantic coast of Cape Breton island, is 5 miles wi entrance between White Point and Cape Gabarus, and extends inland 5 miles

On September 5, 1900, a contract was entered into for the construct breakwater at Harbour Point, near the head of the bay. The work under was commenced in July, 1901, and completed in January, 1902. The breal 190 feet in length, including an inner section, 70 feet in length and 16 feet in top, of round timber laid open-faced and close-fendered on the seaward sic an outer section 120 feet in length and 24 feet in width, on top of square close-faced and close-fendered on the seaward side, at the outer end, and on side for a distance of 15 feet. The substructure is of creosoted and the super of native timber. The top of the covering is 5 feet above extreme high wate depth at extreme low water at the inner and outer ends of the outer sec respectively, 1 foot and 12½ feet. Spring tides rise 5 feet.

Expenditure in 1901-02 was $8,259.50.

The sum of $6,000 was appropriated for expenditure in 1903-4 in exten work, but no action was taken; it having been found that an additional amou be required for a proposed extension 125 feet in length.

GEORGEVILLE.

Georgeville, Antigonish county, is on the southern shore of Northu strait, 6½ miles southwest from Cape George.

A wharf was constructed here in 1892-3 to afford the inhabitants ship landing facilities. It was 207 feet in length and 20 feet wide, with an I by 20 feet, on the eastern side of the outer end; but during 1886-7-8, an e 44 feet in length, 40 feet in width, with an 'L' 20 by 24 feet, was added there ing a total length of 251 feet, 20 feet wide for a distance of 187 feet, 40 feet a distance of 40 feet, and 60 feet wide for the remaining distance of 24 feet. T end of the wharf, for a distance of 87 feet was of stone covered with plank, remainder of the work, of square timber cribwork, protected by sheathing and The depth of water at the outer end, at low water, is 7 feet.

During the severe south-west gales of September 12, 1900, which caused damage in the Gulf of St. Lawrence, the woodwork on the stone approach w lifted by the sea and removed several feet. The sum of $291.25 was expende ting it back into position, but it was shortly after, again disturbed by the se a heavy gale.

During 1901-2, the sum of $699.47 was expended in removing and taki the woodwork on the top of the stone approach; the stone wall was taken a depth of 4 feet, and in its place cribwork was substituted, fully balla covered with the old plank, and the outer faces of both cribwork and stone w close-sheathed.

The sum of $2,500 was voted for expenditure during 1903-04, towards tl sion of the wharf, 50 feet in length and 25 feet wide, with an 'L' 40 by 25 the western side of the outer end.

A plan and specification for the work was prepared, the necessary mater procured during the winter and spring, and all was ready to commence constr the end of the fiscal year.

Out of the amount voted, the sum of $2,499.70 was expended during the

Spring tides rise 4½ feet.

The total expenditure on the work up to June 30, 1904, was $14,320.15.

GRAND ETANG.

Grand Etang, Inverness county, is situated on the Gulf of St. Lawrenc midway between the harbours of Margaree and Cheticamp.

he opening of a channel through a beach which separated the waters of the gulf
a large and deep fresh water pond, and the construction of a channel protection
o make the pond available for use and shelter of fishing boats and small vessels,
itated the diversion of the highway across the pond, 500 feet above the former
g.

ne bridge is 563 feet in length, including the east and west approaches of brush
one, with cribwork abutments, respectively 94 and 51 feet in length, and 438
pile work. It is provided with a hand rail on each side, and the boat channel
h the above is spanned by a drawbridge. The depth at extreme low water over
ntral 200 feet of the length of the work is about 6 feet, and to firm bottom,
h water and soft mud, from 21 to 24 feet. The piles having been weakened by
ages, of the teredo, temporary repairs were made in 1898-99 and 1899-1900. In
the sum of $2,799.35 was expended in temporary repairs and in procuring all
osoted piling and part of the native timber required for its reconstruction.

uring the year 1902-3, the sum of $1,020 was laid out in temporary repairs to the
dge; in procuring the balance of the native timber required; and in construct-
new bridge parallel to and distant 9 feet from the south or inner side of the old

ne appropriation for 1903-4 was made to cover an over-expenditure of $1,279.78
ed in 1902-3 in completing the new bridge.

xpenditure during fiscal year 1903-4, $2,279.78. The total expenditure in con-
with works at Grand Etang to June 30, 1904 was :—

On channel and protection works	$23,870 64
On bridge construction, 1895-6	3,690 20
On repairs to bridge and on construction of new bridge	5,385 08
	$32,945 92

GRAND NARROWS.

and Narrows, Cape Breton county, is on the south-eastern side of Barra strait,
connects the Great with the Little Bras d'Or lake. It is an important station
Intercolonial Railway at the southern end of the railway bridge which spans the
t this place, and is also a landing place for steamers, which call twice a day
ails and passengers for and from Baddeck, and make connection with the ex-
rains east and west.

ne old wharf was 287 feet in length, including 67 feet of cribwork filled with
nd stone and covered with gravel; 80 feet of pile-work built in 1885-86 by the
nent over the remains of an old landing pier built by the provincial govern-
and an extension, 140 feet in length built by the department in 1883-84. The
on consisted of three blocks, each 20 by 20 feet, and an outer block or head,
long and 60 feet wide, with 15 feet openings or spans between each block.

pairs were made upon the structure from time to time, but owing to natural de-
e ravages of the teredo, it fell eventually into a dangerous condition, it was
to reconstruct it with creosoted timber piling.

uring 1902-3, the sum of $1,300.66 was expended in reconstructing the work with
rk, to the end of the old work and 10 feet beyond ; the work being 297 feet in
24 feet wide for a distance of 277 feet and 30 feet wide for the remaining dis-
f 20 feet; and having a depth, at low water of 11 feet at the outer end.

order to render the wharf accessible to steamers of a greater draught, the sum
00 was voted for expenditure during 1903-4, towards the extension of the wharf
eet at low water, a distance of 57½ feet on the centre line, and the construction
L' 30 by 30 feet, on the southern side of the outer end.

ans and spcification for the proposed pile-work were prepared and all necessary
als were obtained, but as the creosoted timber required was not delivered until

the latter part of June, construction could not be commenced by the end of th year, and out of the amount voted, the sum of $2,478.79 only, was expended.

The total expenditure on this work, up to June 30, 1904, including a ref $1,289.70 paid to the provincial government, is $11,164.75.

GRAND RIVER.

Grand River, Richmond county, is a small tidal stream rising in Loch L and emptying into the Atlantic ocean, six miles to the eastward of the entra St. Peter's bay. The entrance is obstructed by a bar of sand, over which the depth of about 3 feet at extreme low water, and rendered dangerous by severa rocks. Inside, the channel carries 6 feet at extreme low water to within half a a bridge crossing the river three miles inland.

During the fiscal year 1903-04, the sum of $648.41 was expended out of the priation of $1,000 in improving the entrance. The work was not completed end of the fiscal year, but was continued until completion by the removal of rock or point of reef on the west side.

GRANVILLE CENTRE.

Granville, Annapolis county, is a scattered settlement of some 300 people ted on the right or north bank of the Annapolis river, four miles east of o Granville Ferry. Both banks of the Annapolis river, from the town of Anna the head of navigation at Bridgetown, a distance of about fifteen miles, are settled by a thrifty, agricultural and fruit-growing population.

In 1901-02, the sum of $851.02 was expended in constructing a pile-wharf, long, 25 feet wide, with an L 25 feet long, giving a face length of 50 feet al face of the wharf. The wharf is 18 feet high, carrying at high water a depth of

In 1902-03, the sum of $857 was expended in completing the wharf, in co ing a road approach 900 feet long, and in building a freight shed 26 by 14 the outer end of the wharf.

In 1903-04, the sum of $199.50 was expended in filling the angle made b with the main portion of the wharf, with substantial pile-work, to give mo for teams to turn. The piece of new work is triangular in shape, being on rectangle 50 feet long and 25 feet wide.

Spring tides rise about 27 feet.

GREEN COVE.

Green Cove, Victoria county, is a small fishing station on the north-easter of Cape Breton island, about midway between North Bay, Ingonish and Nei bour, being about five miles north from the former and four miles south from th

The cove is a small indention in the general coast line, about 400 feet i and 900 feet in width, and is protected on the southern end by a reef, and f eastward by outlying ledges.

During 1889-90, the sum of $200 was expended by the department in im the landing beach for boats, at the northern end of the cove, by the removal rock and boulders.

On February 4, 1903, a contract was entered into for the sum of $6,475 construction of a breakwater extending from the shore to the innermost of t lying ledges, a distance of 450 feet, but actual work was not commenced dur year 1902-03.

The work under contract was 450 feet in length and 16 feet wide at a he 2 feet above high water, with sides sloping 3 to 1 on the outer and 2 to 1 on th face, and top rounded ; the inner 180 feet consisting of quarried stone emba and the outer 270 feet of a stone embankment, with cribwork core.

nstruction was commenced on August 4, 1903, but owing to an extremely stormy , causing considerable damage, and consequent delay, the progress was slow, to the end of December, when work had to be suspended for the winter, only ne-half of the work under contract was completed. The work was resumed on ning of navigation in May, and at the end of the fiscal year it was completed, ng some slight trimming of the stone slopes, which was finished on July 8, The expenditure for the year 1903-04 was $6,432.50.

HAMPTON.

mpton, formerly Chute's Cove, Annapolis county, is situated on the south-east the Bay of Fundy, twenty-seven miles north-east of Digby Gut and six miles est of Bridgetown, an important station on the Dominion Atlantic Railway. It opulation of about 200 people, engaged in fishing, farming, and the export of od and timber.

1855 and 1856, a small pier, 165 feet long was built near the western side of the e provincial government contributing $600 to its cost. The site was chosen by sioners, apparently without professional advice, and was objectionable on many s. At a cost of $3,000 in 1879, an addition of 121 feet was made by the de- nt, and the older portion of the work was strengthened with the hope of ing some of the defects of location.

1881, on further examination, it was found that the original work had been ndermined by the sea and that owing to the direction of the pier the shingle t shoaling on the inside. It was therefore decided to rebuild the structure on site about half a mile to the eastward, which was carried out at a cost of The new pier, as then completed, was 246 feet long, more substantially built, ch better located than the old one. It being situated immediately to the west- a small brook which serves to keep the schooner berth alongside free from In 1888-9, it having been found that the stream had worked under the founda- dangering the whole structure, the department expended the sum of $750 in ling the inner face, levelling up the top of the work, which had settled in places, in some additional ballast, and effecting general repairs to the covering and

February, 1889, during a heavy freshet the brook again gave some trouble, away its banks and the gravel beach, and threatening to undermine the break-

1890-91, the department spent $21 in repairing the damage and in turning the nto its original channel. In 1892-93, the breakwater being found not quite ough to give convenient berth to schooners, the department applied the sum of n constructing a block 40 feet long, 27 feet wide on top and 27 feet high on the nd, and in repairing about 100 feet of the inner end of the old work by raising er face, putting in new floor stringers and covering them with new planking, tting the work in thorough repair.

the year 1898-99 the sum of $1,999.79 was expended in extensive repairs of the ater. The whole top of the work for the outer 185 feet in length, 20 to 26 feet h, was raised with new work for a height of from 2 to 4 feet, rendered neces- the great and unequal settlement of the work caused by the scouring action of e stream that discharges alongside and has made its way beneath it. To pre- repetition of this action, the inside face of the breakwater was protected for a of 80 feet with a puddle wall, faced on the outer side with 3-inch plank. The ater has a total length of 270 feet, a width of from 20 to 26 feet, and a height outer end of 24 feet, where at high water ordinary spring tides there is a depth eet of water.

In 1902-3, the sum of $207.63 was expended in sheathing with close-pili 53 feet on the shore end of the east side of the breakwater, to prevent the litt that issues to the east of the breakwater from undermining the work.

In 1903-4, the sum of $49.99 was expended in renewing a small quantity sheathing that ws torn off by ice during the previous winter.

The total expenditure to June 30, 1904, including a refund to the provin ernment of $1,538.10, is $11,366.51.

The work was transferred to the control of the Department of Marine a eries on June 12, 1888.

Spring tides rise 32 feet; neaps 28 feet.

HARBOURVILLE.

Harbourville, King's county, is situated on the south shore of the Bay o fifty-three miles north-east from Digby Gut. The population of the settl about 200 people, engaged in fishing and farming, the former being the staple The harbour, which is only 400 feet long by 200 feet wide, and dry at low formed by the mouth of Givan's brook, and affords at high water complete she storms from all quarters to vessels drawing up to 14 feet of water.

The works here consist of two breakwaters or piers, one on either si entrance of the harbour. They were built many years ago, before confede the provincial government, when the shipping business of the place was co greater than it has been since the opening of the Dominion Atlantic Railway

The western breakwater was extended by the department in 1876, at $2,000, since which date numerous small expenditures, aggregating up to $7,861.09, have been made in repairs and renewals, to one or other of the pi works are of open-faced round-log cribwork, their outer end being close-shea flatted spars. In the year 1900, general repairs and improvements were made ing of the widening of the outer end of the western breakwater to the full the rest of the work (45 feet), and its extension one panel length (12 feet), extension of the eastern breakwater or wharf by a new piece 80 feet long an wide, designed to protect vessels lying at the breakwater.

In 1903-04, the department expended the sum of $499.71 in general re renewals, the work done consisting of the repair and refilling with ballast of of the main breakwater, the renewal of the guard timbers of both the breakw the wharf on the north side and the thorough repair, including new top tim cross-ties, of the crib walling around the little inner harbour, in which fish find berth and anchorage.

Spring tides rise about 38 feet.

The total expenditure to June 30, 1904, is $11,633.72, including a refun to the provincial government in 1887-88.

This work was transferred to the control of the Marine and Fisheries on 1888.

HAWK INLET.

Hawk Inlet, Shelburne county, is on the extreme southern end of Ca island and the centre of a very important fishing station. The inlet has n navigable for even small boats at all tides and during storms fishermen oft either refrain from going out, or else being out, were unable to get home until tide had risen sufficiently to allow the boats to float in. In the fiscal year and 1902-03, the sum of $700 was expended in making a cut through the flats.

During the fiscal year 1903-4, an additional sum of $500.04 was expended i ing and deepening the channel and removing about 110 tons of boulders ge a ton in weight, some of which had to be blasted.

e work was done by tide-work under some difficulties, with ploughs and harrows o allow the loose sand being carried away by the tides.
e channel is now 1,000 feet in length and 20 feet wide with 3 to 5 feet of water water ordinary spring tide, which is sufficient to float small boats at all times and accommodates the larger ones at about ½ flood. This channel is now used fishermen and is of much advantage to them in seeking shelter, and shortening tance to the fishing grounds by 1 to 2 miles.

HERRING COVE.

rring Cove, Halifax county, is a small, narrow and nearly land-locked basin , situated on the west side of the mouth of the harbour of Halifax, 5½ miles in line nearly south from the city. Around the cove is a fishing village of about sons, wholly dependent upon fishing. The annual value of the catch is $100,000.
, the department spent the sum of $2,400, in dredging a bar of sand and silt d formed at the entrance of the cove, a little over 12,000 cubic yards of mat- eing removed. In 1894-5, the bar having reformed, the department dredge e Mackenzie' dredged 12,915 cubic yards of sand, besides numerous large s. On February, 1903, a contract (No. 4599) ($11,475) was awarded for the ction of a breakwater on the east side of the mouth of the cove. The work feet long, 35 feet wide on top, and 20 feet high at the outer end, where, at high rdinary spring tides there is about 16 feet of water. It is substantially built d-log cribwork, the lower portion up to half tide being of creosoted timber, t the ravages of the limnoria.
additional sum of $75 was paid to the contractors for treating the upper of the breakwater with carbolineum avenarius.
ring tides rise 6 feet, neaps 5 feet.
e expenditure for the fiscal year 1903-4 was, $8,159.

HORTON LANDING.

lorton Landing, or Lower Horton, is situated at the eastern end of King's county mouth of the Gaspereaux river, about midway between Avonport and Wolf- It is a station on the Dominion Atlantic Railway, and situated in the richest st fertile agricultural district in the province.
wharf was built on the left bank, near the mouth of the river, by the provincial ment, from 70 to 80 years ago. This structure having fallen into decay and so dilapidated at to be useless for shipping purposes, was rebuilt by the depart- n the year 1888-9, at a cost of $2,252.88. The new structure is built upon the the old. It is 172 feet long, 65 feet wide at the outer end and 23 feet 6 inches the inner end. It is of open timber cribwork, well fendered and ballasted ered with plank. The site is a safe and sheltered one being near the mouth river and though the work is dry at low water, owing to the great range of om 40 to 48 feet, vessels drawing 18 feet can reach it at high water.
903-4, the sum of $70.20 was expended in renewing six mooring posts and a few in the floor.

INDIAN BROOK FLATS.

dian Brook Flats, Shelburne county, the site on which the wharf at this place , consists of a line of flats running from the shore of Cape Sable island into gton Passage, and is distant from the village, (often called North East Point) mile to the south-west. This wharf not only accommodates the people of the but also about 300 or 400 other people living from 1 to 2½ miles therefrom. cupation of the population is fishing, and they have, hitherto had no facilities

whatever for carrying on their vocation. In order to better their condition respect, the department in the fiscal year 1902-3, purchased the only available a wharf at this place, on which a small structure already existed, together w right of way to the public road, and the construction was commenced, the expended was $2,648.81.

During the fiscal year 1903-04 the wharf was completed ; it consists of f tinct sections ; a rock bank approach, 41 feet in length ; a piece of alterna and span work, 56 feet in length ; a pile-trestle bent stem, 374 feet in lengt pile trestle-bent head, 40 feet in length, making a total length of wharf of which carries it from the shore to the channel at the outer edge of the flats. proach is of the usual rock-bank style, 27 feet wide on top and has a height at th end of about 9 feet. The block and span work consists of two blocks of ro stone-filled cribwork, each 20 feet long and separated by a clear span of 16 length ; it has a width on top of 18 feet and a height at the outer end of a feet. The stem consists of 34 pile-trestle bents placed 11 feet distant, centre t of piles, with a common width of 16 feet, and having a height of 11 feet at th end. The head of the wharf is 40 feet in length and 50 feet wide on top, built o trestle bents, well fendered and braced, and has a height of 23 feet at the ou standing on the extreme edge of the channel. The expenditure for the fis 1903-4 was, $672.90.

IONA.

Iona, Victoria county, is on the northern side of Barra strait, which conn Great with the Little Bras d'Or lake. It is a station on the Intercolonial Rail the northern end of the Grand Narrows Railway bridge, and a landing place steamers of the Bras d'Or Steam Navigation Company.

During the winter months, ice and weather permitting, a steamer carryin and passengers keeps up daily connection between Baddeck and Iona; owing to ties in opening the draw-bridge during the winter on account of ice and other the steamer could not at all times reach the old wharf on the western side bridge, it was therefor decided to construct, on the eastern side of the railway a wharf extending into 10 feet at low water and connected with railway stati road 350 feet in length. The work was done during the years 1901-2-3.

The wharf is a block and span structure, 260 feet in length, consisting of work blocks, with openings or spans between them, 18 feet wide. The thre blocks are 40, 22 and 22 feet long respectively, and 20 feet wide; the three outer are 22, 22 and 42 feet in length, and 30 feet wide on top. They are constru round timber, laid open-faced, with creosoted timber substructures, fully b double fendered on the sides and the outer end, and the outer faces of the thre blocks close-sheathed.

The sum of $5,000 was voted for expenditure during 1903-4, towards the ex of the wharf. Plan and specification were prepared, and on May 20, 1904, a c was entered into, in the sum of $10,230 for its construction, but up to the end fiscal year, the work under contract had not been commenced.

On April 22, 1904, the ice forced in by a northerly wind destroyed the o feet of the superstructure of the outer 42 foot block, leaving the creosoted subst uninjured. On June 17, 1904, instructions were given to expend the sum of in repairing the damage done, and in placing the wharf in condition to carry but of this amount the sum of $684.45 only, could be expended by the end of

ISLAND POINT.

Island Point, Victoria county, is on the south side of Boularderie Islan teen miles from the bridge crossing the Little Bras d'Or at the head of St. A channel, an arm of the Bras d'Or lake.

wharf, 120 feet in length, and 20 feet in width, with an 'L' at the outer end, 1 feet, extending to 21 feet at ordinary lake level, and consisting of blocks and was constructed at this place by the department, during 1886-87.

ring 1892-3, the sum of $499.48 was expended on repairs to the wharf, which n damaged by ice.

e ravages of the teredo below, and the natural decay of the wood above the evel, caused the work to settle and become dangerous, and the sum of $550 was riated for expenditure in repairs during 1902-3.

hen the work was visited to start the repairs, it was found that the inner blocks d to be reconstructed, and that the top of the outer block had been carried away, o 3 feet below low water, and as the amount voted was entirely too small to re-ct the whole work, the sum of $513.37 was expended in reconstructing the inner d in procuring a portion of the native timber required to reconstruct the outer

e sum of $1,400 was voted for expenditure during 1903-4, for the reconstruction outer block with creosoted timber piling.

an and specification for the proposed work were prepared, and the balance of the timber and the creosoted timber were ordered to be delivered early in the spring, ng to delay in delivery of the creosoted timber, and the difficulty in procuring ble pile-driver, the work had not been started at the end of the fiscal year. The expended during the year was $915.31.

e total expenditure to June 30, 1904, is $3,881.70.

JANVRIN'S ISLAND.

nvrin's island, Richmond county, is a large island to the westward of Madame from which it is seperated by Mousselier's passage.

e sum of $2,000 was voted for expenditure during 1903-04, towards the con-on of a wharf on the island. A plan and specification were prepared for a timber block and span wharf, 195 feet in length, 16 feet wide, and extending into at low water to be built on the northern side of Janvrin's harbour were pre-The materials required were contracted for to be delivered early in the spring, y could not be delivered until after the end of the fiscal year, the sum of $24.20 pended for salary and expenses of the foreman while making arrangements for ivery of the materials.

JUDIQUE.

dique, Inverness county, is on the east side of St. George's bay, ten miles south Hood, and sixteen miles north from the entrance to the Strait of Canso.

ring 1898-99-1900, a breakwater 725 feet in length and 20 feet in width, with 20 by 20 feet at the outer end, and extending into 6 feet at low water, was built department at McKay's point, for the protection of fishing boats.

e work was constructed of round timber, laid open-faced, with creosoted timber cture, close-sheathed around the outer end and the 'L,' and protected on the l side by a talus of stone.

September 12, 1900, during a severe north-westerly gale, the work sustained damages.

ring the year 1902-03, the sum of $898.77 was expended on repairs and improve-as follows :—The floor stringers and the covering for a distance of 137 feet, hey had bene distributed, were replaced ; the outer face-chambers for a distance feet were reballasted, and 407 lineal feet of the cap-timber were renewed.

ring the year ended June 30, 1904, the sum of $398.48, was expended in com-the improvements, by close-sheathing, the seaward face, for a distance of 400

tal expenditure to June 30, 1904, is $21,204.36.

KINGSPORT.

Kingsport, King's county, formerly known as Oak Point, is a village of s people, on the south-west side of the basin of Minas, between the mouth of t wallis river and Cape Blomidon. It is the terminus of the Cornwallis Valley (opened December, 1890, and now a branch of the Dominion Atlantic Railwa ning to Kentville, the county town, fourteen miles to the south. A pier, 445 length, built of piles, already stood here when the harbour was taken in charg Department of Public Works. In 1873-74, the department built cribwork 12 f on the eastern or exposed side of the wharf for the purpose of breaking the the sea. In 1875, the work was extended a length of 240 feet, by a width of in order to increase the sheltered area, and afford earlier access to the roadste of the pier, which, owing to the great range of tide, was dry between half ebb flood. In subsequent years repairs were several times made. In December, 1 Cornwallis Valley Railway was opened for public traffic, and about the same wharf, which forms the terminus of the railway, and on which is a track, wa by the department, to the railway company.

During the fiscal year 1901-02 the sum of $9,276.72 was expended in rebuil upper half of the outer block of solid cribwork, 270 feet long, which was built A widening or re-enforcing block 10 feet wide was also built on the north side whole length of this outer portion.

In 1902-03 the sum of $4,934.60 was expended in continuing the repairs an als to the works begun the previous year. The outer 130 feet in length of the taken down to a height of 15 feet and rebuilt in substantial cribwork. On t side of the pier for its whole length of 700 feet re-enforcing block, 10 feet w partly built.

In 1903-04, the sum of $5,052.61 was expended in continuing the repairs newals carried on during the previous few years. The work done consists in t pletion of the 10-foot re-enforcing block on the north side, the thorough renewa feet in length of the pile work portion of the shore end of the pier and the r the next 100 feet shorewards, which is of cribwork and earth and stone filling.

Spring tides rise 48 feet, neaps 40 feet.

The total expenditure by the department up to June 30, 1904, including to the provincial government of $1,738.14 in 1887-88, is $46,931.90.

L'ARDOISE.

L'Ardoise, Richmond county, is situated on the eastern side of St. Pet near its entrance from the Atlantic ocean, and about nine miles east from the s entrance to St. Peter's canal.

An isolated breakwater, built in 1876-77, off Martin's Point, in from 5 to at low water, and almost destroyed in 1883, was reconstructed during 1891-92

The work consists of a timber core, 400 feet long and 20 feet wide, pla the remains of the original structure, in from 1 to 4½ feet at low water, its to ing 1 foot above high water, the whole being covered with stone, sloping 3 to seaward side and outer end and 2 to 1 on the inner side and inner end. T surface of the work, above low water mark, was covered with stone of not l 15 cubic feet each, and the spaces between these stones, above the line of hig were filled in with concrete.

Since the completion of the work, the covering stone on the seaward and o slopes, which had been disturbed by the sea, have been replaced, and a concr 3 feet wide on top and 4½ feet in height, with a top flush with the surface of th ing, has been constructed over the outer face and the ends of the cribwork c

The breakwater averages 17½ feet in height from the original bottom u top of the stone covering, which is 5 feet above high water, and 10 feet above lo springs.

In order to stop the undertow from sweeping into the harbour through the gap, ween the inner end of the breakwater and the shore to the eastward of it, a distance about 1,200 feet, it was decided to close the gap by cribwork.

A plan and specification for the proposed work were prepared, and the contract its construction, was entered into on December 29, 1903, in the sum of $24,820.

Owing to the delay in the delivery of the timber required, the work of construc- n had not been commenced by the end of the fiscal year.

The work under contract consists of a cribwork breakwater 1,145 feet in length, l of a stone embankment 50 feet long. The cribwork for a distance of 350 feet from outer end is to be 20 feet wide on top and protected by a stone talus on each side, l for a distance of 795 feet it is to be 16 feet wide on top and protected by a stone us on the seaward side. The stone embankment is between the outer end of the ework and the old breakwater, and is to be constructed with large quarried stone, ping 3 to 1 on the outer, and 2 to 1 on the inner side.

The expenditure incurred in calling for tenders, &c., was $104.27.

LARRY'S RIVER.

Larry's River, Guysborough county, is at the western extremity of Tor bay, on the thern or Atlantic coast of Nova Scotia, 24 miles to the westward of Canso harbour.

The harbour, a channel through mud flats improved by dredging, was formerly tected from the eastward by a beach and bar of shingle. Since 1896 the point of beach at the northern extremity of the bar and the bar itself have been lowered carried inward toward the channel.

In order to restore the shelter formerly afforded by the beach and bar, a contract entered into on September 22, 1902, for the construction of a breakwater, for the n of $15,840.

The work under contract consists of two sections of stone embankment, respec- ly 125 and 379 feet in length, each 14 feet in width at the level of 2 feet above n water and 6 feet in average height, and a central section of cribwork 500 feet ength, 14 feet in width on top and 11½ feet in average height, protected on the ward side by close-fendering and by a talus of stone sloping 2 to 1 from high water. embankment and cribwork to be finished at a height of 4 feet above extreme high er. Spring tides rise 6½ feet.

In 1902-03, very little work was performed, operations not having been commenced June 22. The amount expended on the work performed up to June 30, 1903, was 9.81.

During the fiscal year 1903-04, the work under contract was completed with the eption of placing 350 cubic yards of stone in the talus. The expenditure for the r 1903-04 was $13,627.50.

The work was completed in a satisfactory manner on July 16, 1904.

LINGAN.

Lingan, or Bridgeport harbour, Cape Breton county, is at the head of Indian on the northeast coast of Cape Breton island, about 5 miles to the eastward of entrance to Sydney harbour. A large pond or basin, having a depth of 8 feet at or 12 feet at high water, is separated from Indian bay by a beach of sand. The rance, which forms the harbour, was deepened and straightened by dredging in 3-80 to improve the facilities for shipping coal from the Lingan mines, since ndoned. It is now crossed by a bridge built by the provincial government for the mmodation of traffic over the beach between Lingan and Bridgeport.

A work of brush and stone 1,900 feet in length, constructed in 1876-8, afforded an ient protection to the beach up to 1893, but has since been carried away in places r distances aggregating 1,400 feet.

In 1901-2 the sum of $1,999.60 was expended in constructing 1,000 feet o and stone work, 14 feet in width and 4½ feet in average height; leaving 1,3 17 feet in width and 3 feet in average height, to be constructed to complete th undertaken.

In 1902-3 the sum of $599.89 was expended in constructing 500 feet of br stone work.

During the fiscal year 1903-4 the sum of $998.05 was expended in extend beach protection work 480 feet or to within 350 feet of the entrance, and in co ing a cross-wall of brush and stone 300 feet in length between it and the south the bridge.

LITTLE HARBOUR.

Little Harbour (Arnold's Point), Shelburne county, is situated on the easterly extremity of Black Point, about five miles of Lockeport. It has a pop of about 250 people, chiefly engaged in fishing operations. The fishermen h protection for their boats and lose many valuable craft for want of shelter.

At its session of 1902, parliament made an appropriation of $1,700 for t struction of a breakwater wharf, 280 feet long, for the protection of this h but the work could not be carried on in 1902-3, owing to the difficulty of pr timber, the sum of $138.68 only was expended.

During the fiscal year 1903-4, the sum of $2,013.49 was expended on thi but the structure was not completed. When completed the breakwater will length of 280 feet, composed of 73 feet of rock-bank approach, 24 feet wide, feet of continuous cribwork 20 feet wide and 14 feet high at the outer end.

Spring tides rise here 6½ feet, neap 5 feet.

LIVINGSTONE'S COVE.

Livingstone's Cove, Antigonish county, is on the southeastern shore of N berland strait, about two miles south-west from Cape George.

For the purpose of affording shelter to the fishing boats of the district landing place for steamers and small vessels, a breakwater was commenced department in 1899, and completed in September, 1902.

The work extends out into 9 feet at low water spring tides, it is 312 length and is approached by a road cut through the clay bank, 105 feet in The breakwater is a continuous structure, and consists of a shore abutme stone retaining walls, 30 feet long and 18 feet wide, on top of a cribwork block long and 18 feet wide, and of a cribwork extension 202 feet in length and 24 fe with an 'L' on the southern side of the outer end, 24 by 24 feet. The crib constructed with native squared timber, laid with 7-inch openings, it is fully b and fendered, and the northern, or seaward face, the outer end and the south of the 'L' are sheathed with hardwood.

It having been found that the teredo was attacking the work, principally seaward face, during the fiscal year ended June 30, 1904, the sum of $1,800 pended in placing a heavy stone talus along its seaward face, extending fro water mark on the work with a slope of about 3 to 1.

Spring tides rise 4½ feet.

The total expenditure to June 30, 1904, is $15.856.60.

LOCKEPORT.

Lockeport, Shelburne county, is situated on the Atlantic coast, about f miles south-east of Shelburne, and has a population of about 800. It has been one of the most important centres of the fishing industry.

)uring the years 1899-1900 and 1900-1901, the sum of $3,944.64 was expended in onstruction of a breakwater. In 1902-3, the sum of $299.64 was expended in re- of this work.

)uring the fiscal year 1903-4, the sum of $225.56 was expended in extending the a further distance of 520 feet, consisting in the construction of a double row of driven into the sand 5 feet, planked on the outside with 2-inch planks and on the with 1-inch boards, the whole securely fastened. The rows of posts are driven, ine parallel with the general line of the beach, 8 feet apart both longitudinally aterally, and the space between them is filled in with sand. The work is in the of a crescent and particular care towards obtaining regularity of shape was

LOWER WASHABUCK.

Lower Washabuck, Victoria county, is on the southern side of the eastern end of atrick's channel, an arm of the Little Bras d'Or lake.

Crow Point is a small island, connected with the mainland by a gravel and shingle , about 900 feet in length and from 20 to 50 feet wide at high water, forming a little boat harbour inside.

As this beach was being wasted by the sea during easterly gales, and it was feared t would eventually be cut through and destroy the harbour inside, it became sary to protect it. During the year ended June 30, 1904, the lowest and narrow- ortion of the beach, for a distance of 200 feet, was raised to a height of 3 feet high lake level, by the construction of round timber cribwork, well bedded into each and fully ballasted, at a cost of $399.81.

LOWER WEST PUBNICO.

Lower West Pubnico, Yarmouth county, is a thrifty and thickly populated dis- situated on the west side of Pubnico Harbour, from 30 to 35 miles south-east Yarmouth. The people are engaged in fishing and farming.

In 1902-3, the sum of $1,000 was expended in rebuilding and converting into a e wharf an ancient cribwork wharf situated on the lower or southern end of the et. The outer 120 feet in length of the old work was substantially built in pile- ; it is 25 feet wide and from 8 to 14 feet high. At the outer end there is about et of water at high water ordinary spring tides.

In 1903-4, the sum of $895.62 was expended in building the middle portion of the f of which the reconstruction was begun in 1902-3. The piece of work built was et long, 30 feet wide and from 9 to 13 feet high. The stone approach from the end, a length of about 75 feet, was also raised from 1 to 3 feet and walled up stone on the south side.

Spring tides rise about 12 feet.

MAIN-À-DIEU.

Main-a-Dieu, Cape Breton county, is a small harbour on the eastern coast of Breton island, 10 miles north from Louisburg.

A breakwater 230 feet in length was built on the east side of the harbour in 1881-2. nsists of a cribwork core fully ballasted and covered with stone, sloping on the ard side and at the outer end 3 to 1, and on the inner side 2 to 1.

During the year 1902-3, a plan and specification were submitted and tenders were ed for the construction of a breakwater on the west side of the harbour designed op the under-tow and thus make the anchorage safer.

The breakwater proposed is to extend 320 feet in from 6 inches to 2½ feet at ex- e low water. It is to be of cribwork, 14 feet in width on top fully ballasted,

the seaward side to be close fendered and protected by talus of stone slop from high water. Spring tides rise 5 feet.

Up to June 30, 1904, a contract had not been entered into. The delay to difficulty in obtaining a title to the land required for the site of the prop and for right of way thereto.

MALAGAWATCHT.

Malagawatcht harbour, Inverness county, is situated on the western s entrance to West bay, an arm of the Great Bras d'Or lake.

During the fiscal year 1903-4 the sum of $299.99 was expended in channel for boats between the head of Malagawatcht harbour and River De over flats originally dry, and in constructing on each side, at the south end tion work of brush and stone and cribwork, 100 feet in length. The ne is 1,000 feet in length, 12 feet in width and from 1 to 1½ feet in depth at ord level.

MALIGNANT COVE.

Malignant Cove, Antigonish county, is situated on the southeastern Northumberland strait, about midway between Arisaig and Georgeville, a about 4 miles from each.

The sum of $5,000 was voted for expenditure during 1899-1900, toward a channel for boats through the gravel beach into a small pond at the head o and for the construction of channel protection works. A plan and specifi works extending outward to 7 feet at low water spring tides were prepared sum of $3,893.35 was expended during the year in procuring the material for the construction of the proposed works.

The work proposed included the construction of piers, placed 60 feet either side of the channel which was to be excavated to a width of 30 f bottom, and to a depth of 2 feet below low water. The piers extending 24 wards through the beach, from low water outside, to be 10 feet wide on founded at low water ; those extending from low water outwards to be 16 for a distance of 60 feet, and 22 feet wide for a distance of 30 feet. All was to be built of round native timber laid open-faced, fully ballasted, sheathed at the end and on the channel faces, the sheathing on the channe the work through the beach to be driven into the beach to a depth of 4 feet water mark.

In 1900-01, the sum of $6,123.64 was expended in the construction of the o each 90 feet in length, and of a portion of the inner pier on the eastern s channel 188 feet in length.

During 1901-02 the work proposed was completed, and a cribwork ext the western inner pier, 60 feet long and 10 feet wide, was constructed to p re-opening of the old channel through the beach, the expenditure incurred to $2,464.85.

In the year 1902-03 the inner end of the western pier, which for a dist feet was built lower than the outer portion was raised to the same level, a 2 feet and planked over ; and beach protection works consisting of a cribw 40 feet long, 12 feet wide and averaging 10 feet in height, and an extensio brush and stone 50 feet long were constructed on the eastern side of the ea to prevent the sea from washing over the beach and carrying sand into th between the piers. The amount expended during the year was $799.94.

During the fiscal year ended June 30, 1904, the sum of $1,099.07 was ex close-piling the outer ends of the piers, and their faces for a distance of 20 the end with hardwood piling ; in replacing ballast washed out of the en

piers ; in extending the beach protection work on the eastern side of the eastern pier for a distance of 40 feet with cribwork ; and in procuring materials for extending the beach protection a further length of 90 feet.

Total expenditure to June 30, 1904, is $14,380.85.

MARGAREE.

Margaree harbour, at the mouth of the Margaree river, Inverness county, is on the west coast of Cape Breton island, about thirty miles north-east of Port Hood. It has a narrow intricate channel through which the tide runs at the rate of four knots, and its entrance is obstructed by a bar of shifting sand, over which there is, at time, a depth of only 5 feet at extreme low water.

Expenditures have been made by the department in the construction and maintenance of channel protection and improvement works on the west side of the entrance, and in the construction of beach protection work on the east side.

The works on the west side include works built by the provincial government and extended by the department, and works of improvement undertaken in 1900-01.

The old provincial government works (reconstructed by the department) extended 400 feet from the shore, across what was originally a false channel, to a large rock opposite the inner entrance and thence, at right angles, to the edge of the channel.

The work built by the department extends from the north side of the outer provincial government works outwards, along the west side of the channel 595 feet. It is in four sections : 85 feet (built in 1876), 130 feet (built in 1879), 200 feet (built in 1890) and 180 feet (built in 1899), respectively, 18, 16, 18 and 20 feet in width on top, and 15, 14, 12 and 16 feet in height. Each section is of round timber, open-faced and is fully ballasted and close-fendered at the sides and outer ends. The top of the covering is from 4 feet 4 inches to 5 feet above extreme high water. The depth, at extreme low water, along the channel face, originally varied from 7 to 2½ feet. Spring tides rise 4 feet.

The improvements undertaken in 1900-01, but not completed, were the deepening along the channel face of the extension to 8 feet at low water over a distance of 200 feet ; and the construction of a shear-dam within the entrance, 180 feet in length, including 25 feet of brush and stonework 11 feet wide on top, 100 feet of pile and brush work 10 feet wide, and 55 feet of cribwork 22 feet wide founded on brush work in from 1 foot 3 inches to 9 feet 9 inches at extreme low water. During the year 1900-01, the sum of $3,695.30 was expended, $400 in repairing the channel face of the outer provincial government work ; $1,796 in procuring materials and constructing the brush and stone work, the pile and brush work, and the substructure of the cribwork of the shear-dam, and $1,499.30 in about one-half of the rock excavation required to give 8 feet at low water along the channel face of the extension.

In 1901-02 the sum of $3,065.57 was expended, $995.78 in completing the shear-dam with the exception of making a roadway over the brush and stone at the inner end, and $2,069.79 in completing the submarine rock excavation with the exception of the removal of a small quantity of excavated material at the inner end of the cutting, and of some points of ledge rock over which there is a depth of only 6 feet 9 inches at extreme low water.

Of the $500 appropriated for 1902-03 the sum of $482.32 was expended : $219.41 in completing the shear-dam ; $61.82 in continuing the channel-face rock excavation ; and $201.09 in repairing and improving the channel protection works.

During the fiscal year 1903-4, the sum of $799.94 was expended in continuing the channel face rock excavation undertaken in 1900-1901.

The total expenditure to June 30, 1904, including $3,378 expended in beach protection works (east side) and a refund of $274.87 to the provincial government, is $28,827.70.

MARGARETVILLE.

Margaretville, Annapolis county, is the most important village on the sou of the Bay of Fundy, between Digby Gut and Scott's Bay; it is forty-two mil east from the former, thirty-six miles south-west from the latter, and eight mi from Middleton, an important station on the Dominion Atlantic Railway. population of about 500 engaged in fishing and farming.

A pier was begun in 1837 by the provincial government, and subsequently ed to a length of 471 feet. The work was taken over by the Public Works Dep in 1871, since which time it has had frequent renewals and repairs. In D 1885, the pier was severely damaged by a storm, a breach nearly 150 feet lo made clear through it, besides receiving other injuries. The Margaretville Pi pany transferred their title to the pier to the government on August 3, 1886. 1887, the above described damage was made good. In October, 1890, a sev made a breach of 117 feet in the outer portion of the work, besides doing other In March, 1894, the remaining block, 86 feet in length, seawards from the gap, was totally destroyed. In 1897-99, the outer block was rebuilt. This ne which is substantially built of round log cribwork, close-sheathed on the seaw and outer end, is 185 feet long, 42 feet wide and from 22 to 32 feet high. I the sum of $500 was expended in renewing the floor on the shoreward en work and other repairs.

In 1901-2, the sum of $1,560.50 was expended in sheathing the seaward fa breakwater for a length of 155 feet on the shore end, in removing gravel eastern or land side to improve the schooner berth, and in constructing a ne water 250 feet to the eastward of the main work. The new breakwater is long, 16 feet wide, 7 feet high at the shore end, 25 feet wide and 16½ feet hi outer end. The work is substantially built of round-log cribwork, well fendere and filled with ballast.

Spring tides rise about 30 feet. In 1903-04, the sum of $510.72 was exp rebuilding a short piece on the shore end of the breakwater, 14 feet long, 25 and 8 feet high. Also in constructing a small inner block on the east side of end, 22 feet long, 7 feet wide and 8 feet high. A few petty and miscellaneou were also made to the flooring of the breakwater.

MCKAY'S POINT.

McKay's Point, Victoria county, is on the western side of the entrance Patrick's channel, an arm of the Little Bras d'Or lake, and about 2½ miles from Baddeck, the shiretown of the county.

The steamer 'Blue Hill,' carrying mails, freight and passengers makes the season of navigation, two return trips daily between Baddeck and Iona S the Intercolonial Railway, and as McKay's Point is on her course, in order the inhabitants of the district in direct communication with those places, 30, 1904, a contract was entered into, in the sum of $5,442, for the construc wharf extending to 12 feet at low water; but owing to delay in the delivery of soted timber required, work was not commenced by the end of the fiscal ye

The work under contract is a block and span structure, 206 feet in lengt feet wide, with an 'L' on the western side of the outer end 20 by 20 feet; an posed of a shore abutment 28 feet long; of four cribwork blocks, 17 feet lon an outer block 20 by 40 feet, with openings or spans between them, 18 feet i The blocks are to be constructed of round timber, laid open-faced and creo high water, fully ballasted and fendered, and the outer faces of the outer blo be close-sheathed with hardwood as a protection against ice. The expend curred in calling for tenders, &c., was $191.15.

MCNAIR'S COVE.

McNair's Cove, Antigonish county, is on the west side of St. George's bay, about miles to the southward of Cape George.

A breakwater 400 feet in length and 20 feet in width was built on the north side f the cove during 1872-73-74, and in 1878 a length of 20 feet was added thereto. In 879 the work was carried away by drift ice to within 100 feet of the shore end, down from 3 to 6 feet below low water. During the summer of 1883, 70 feet of the shore id was rebuilt, and during the winter of 1884 the work was extended 94 feet. In pril, 1884, the 94 foot extension was badly damaged by drift ice, and was subse-ıently carried away.

During 1886-87-88, the bottom of the damaged work was dredged out, and a ork 160 feet in length, 34 feet wide on top, with a sloping face on the seaward side, as constructed and on its completion the total length of the breakwater was 330 et.

The work was constructed entirely of native timber, and as it became much weak-ıed by the action of the teredo, during 1890-91-92-93-94, the outer end, and on each de of it for a distance of 20 feet, was protected by creosoted timber close-piling, and s seaward face, by talus of quarried stone.

During the years from 1897 to 1901, the timber wall under the sloping face, hich was destroyed by the teredo, was renewed down to low water and close-sheathed ith hardwood timber, the stone talus was raised up to the top of the close-sheathed, id the work was reballasted and re-covered where necessary. Further the mouth a small brook, at the head of the cove, which was continually shifting to the detri-ent of the boat landing, was made permanent by the construction of a shear-dam of ush and stone.

During 1901-2, the sum of $1,197.17 was expended in placing 80 cubic yards of ry large stone on the talus, and in procuring the materials required for the widen-g and renewing of the top of the inner end of the work, which was built in 1872 id which was only 20 feet wide.

In the year 1902-3, the amount of $1,094.58, was expended in reconstructing the p of the inner end of the work, and in widening it to 30 feet for a distance of 120 et, the materials for which were obtained in the previous year ; and in placing out 85 cubic yards of large stone on the talus along the seaward face of the work.

The sum of $6,000, was voted for expenditure during 1903-4, towards the con-ruction of a new end and 'L' with creosoted timber substructure, 32 feet wide and feet in length, but owing to delay in the delivery of the creosoted timber, up to ne 30, 1904, the work of construction had not been commenced. Out of the amount ted, the sum of $4,768.13 was expended for materials.

Spring tides rise 4 feet.

Total expenditure up to June 30, 1904, is $73,095.04.

MCNUTT'S ISLAND.

McNutt's Island, Shelburne county, is about three miles long with an average dth of one mile, situated at the mouth of Shelburne harbour. On the north side the island, and about six miles south by west from the town of Shelburne, lies the orseshoe beach, so called, which protects the only place of shelter in Shelburne arbour, during southerly gales. This beach was broken through so badly by the as that its complete demolition was a question of but a few years.

In order to prevent the destruction of this shelter, the department, in the fiscal ar 1898-99, constructed a cribwork beach protection along the outer side of the ach. This protection stood very well, but was not long enough, as the beach wash-away at its northern end and undermined the works.

During the fiscal year 1903-04 the sum of $489.28 was expended in repairi work and extending same. The old work was 265 feet in length, 9 feet wide and had an average height of 9½ feet. The northern end was rebuilt on a len 40 feet, on a height of 10 feet, and a further length of 100 feet was constr The width of the new work averages 9 feet and the height 10 feet. The whol is constructed of round-log, stone-filled cribwork, well ballasted and fendered work was covered with 4-inch poles to secure the stone ballast from being c away by ice and the waves.

Spring tides rise here 6½ feet, neap 5 feet.

MELBOURNE.

Melbourne is a settlement of some twenty or thirty families, engaged in and farming, situated on the east side of the estuary of the Chebogue river, abou miles east south-east from the town of Yarmouth.

In 1903-04, the department expended the sum of $715.52 in constructing a and span wharf, 100 feet long and 25 feet wide, comprising three blocks of su tially built cribwork, each 25 feet wide, 9 feet long and from 12 to 15 feet hig spans of 12 feet each, and an approach of earth and gravel 50 feet long, wal with large stone on either side.

Spring tides rise about 12 feet, neaps about 10 feet.

METEGHAN.

Meteghan, Digby county, is situated on the north side of St. Mary's bay, t five miles north of Yarmouth, 20 miles south of Weymouth, two and one-half from Meteghan river and forty miles from Digby, the county town. The r railway station on the Dominion Atlantic Railway, which lies approximately p to the coast, and has its terminus at Yarmouth, is about seven miles distant. whole coast of St. Mary's bay, from Digby to Yarmouth, is thickly settled, a in fact, almost one continuous straggling village for the whole distance of sixty miles.

Meteghan, next to Digby and Yarmouth, is the largest and most important ment of the bay shore, having a population of 1,000 people, engaged in farmin ing, lumbering and general trade.

The harbour works consist of a breakwater and landing pier, built of cri between 1837 and 1860 by the provincial government and the inhabitants. Th is about 300 feet long and 20 feet wide. The breakwater 20 to 26 feet wide, runs distance of 925 feet from the shore, and has a return or ell of 85 feet at the outer which is 24 feet wide and 30 feet high, standing in from 25 to 27 feet depth a water ordinary spring tides.

In 1875, at which date the work appears to have been taken over by the G ment, the breakwater was extended and repaired.

In 1878, the additional length of 100 feet was built with a portion of the the outer end, at a cost of $3,000, and in 1881, the sum of $2,250 was expended i further extending the structure by building an additional length of 50 feet on t In 1882-83 the sum of $500 was expended in reballasting and close-piling pa of the work, and in miscellaneous repairs. In 1883-84, $32 was expended in se some of the fenders and a portion of the flooring at the outer end. In 1884-85 damage caused by a severe gale of the previous November was made good at of $96.64 ; a breach 25 feet long and from 4 to 6 feet deep was closed with solid 40 feet of new break was added, and some new ballast put in to replace that w out. In 1887-88, the seaward face of the breakwater was close-sheathed for 70 in length ; 575 feet of the inner face was repaired and sheathed, the whole levelled up and some minor repairs executed ; the expenditure that year was $1,

ch in the departmental report for the year is given as a refund to the provincial rnment on account of moneys expended by them between 1867 and 1879. In 1892-93 department expended the sum of $299.72, in making slight repairs to the break-r and in temporary repairs to the landing wharf. In 1893-94 the sum of $2,627.54 expended in making thorough repairs to the landing pier and wharf, the works consisting of rebuilding and face-fendering the outer block 50 feet in length, ding a new top and back 8 feet thick to the next length of 16 feet, and thoroughly ndering and capping the remainder of the work, a length of 250 feet.

In 1897-98 the sum of $3,141.99 was expended in constructing a re-enforcing k along the whole length of the outer face of the ell of the main breakwater. This , which was rendered necessary by the eating away of the bottom timbers by the noria, and the consequent settlement of the breakwater is 100 feet long, 12 feet and 4 feet high. The upper portion of the ell was also built 35 feet wide, and et high, which restored it to the height of the present work. The new work is and substantially built of round-log cribwork, well fendered, ballasted and close-ted on all exterior faces. In 1898-99 the sum of $1,093.20 was expended in re-ing a length of 120 feet by 8 to 19 feet in height, and by 8 to 10 feet in width, he lower portion of the outward end of the seaward face of the breakwater, which been eaten away by the limnoria ; the work was close-sheathed for the same ance, and for 40 feet on the inner side ; about 10 feet in length of the flooring renewed. A breach 30 feet long on the seaward side, adjacent shorewards to the feet before mentioned, was also closed up.

In the fiscal year 1899-1900, the sum of $2,000 was expended in extensive renewals repairs to the breakwater, the work done consisting of the rebuilding of 100 feet ngth of the seaward face and 90 feet of the inner or shoreward face, about 8 feet from top to bottom of the work, placing top cross-logs all across the breakwater e the new portions together, and a new floor on the portions renewed.

In 1900-1, the sum of $3,499.95 was expended in rebuilding a serious breach made he work by a severe gale in March, 1900. The new block, which had to be built the bottom, is 180 feet long, 22 feet wide and from 18 to 22 feet high. In addi-to this a length of 222 feet of the top of the breakwater was refloored and partly -sheathed, the floor having been destroyed by the storm referred to.

In 1901-2, the sum of $3,199.93 was expended in continuing the restoration of breakwater that had been going on for the last three or four years. The work consisted of a piece 138 feet long, in about the middle of the length of the break-r being taken down and rebuilt. Of the next 200 feet shorewards the northern was taken down and rebuilt 10 feet wide.

In 1902-3, the sum of $2,999.47 was expended in completing the rebuilding of a in the middle of the breakwater, 123 feet long, 20 feet wide on top and from 3 to eet high, that had been destroyed by a violent gale in the winter of 1901-02.

In 1903-4, the sum of $2,342.31, was expended in continuing the reconstruction he work carried on during the past few years. The work done this year consists he taking down and rebuilding of 80 feet in length of the shore end of the work.

Spring tides rise 21 feet; neaps 17 feet. Total expenditure to June, 1904, is 749.85, including a refund to the provincial government of $1,447.33 in 1887-88. The work was transferred to the control of the Department of Marine and Fish-on June 12, 1888.

METEGHAN RIVER.

Meteghan River, Digby county, empties into the Bay of Fundy, at the mouth of Mary's bay, almost directly opposite Grand Passage, between Long Island and r Island. The village at the mouth of the river is twenty miles south of Wey-th twenty-eight miles north of Yarmouth and two and a half miles north of Mete-or Meteghan Cove. The population of the village is about four hundred people,

engaged in farming, fishing, lumbering and general trade. The nearest railv tion on the Dominion Atlantic Railway which runs parallel with the Bay S about four miles distant. On the river, which is about eighteen miles l some twenty saw-mills, most of which send lumber down to the mouth of t for export to the West Indies and United States, the total amount of the aggregating a million feet board measure annually. The works here, whi built some years before confederation, presumably at the joint expense of the cial government and the inhabitants, consist of two breakwaters, one on either the mouth of the river, and inclosing an area of about three acres, in which of 10 to 15 feet is found at high water ordinary tides, giving ample berth ac dation and complete shelter to a large number of coasting and fishing vessels.

The north breakwater is about 400 feet long, 23 feet wide and 13 feet hig outer end. Both breakwaters are built of stone-filled cribwork of the usu When the work came under the charge of the department, the older portio much decayed, and extensive repairs were needed, which were made in 18' cost of $4,500. In 1881-2, the sum of $2,000 was expended in rebuilding and ing parts of both breakwaters. In 1882-3, the sum of $3,000 was expended i piling and extending the south breakwater a length of 80 feet, in general re the north breakwater, and in removing from the dock a large quantity of ro boulders which were used as ballast in the new work. In 1890-1, $265.19 was ed in removing from the channel, near the shore end of the work, more rocks a ders, that interfered with the keels of vessels lying alongside; slight repairs w made under the same appropriation to both breakwaters. In 1898-9, the sun 110.76 was expended in extensive renewals to the shore end of the south brea the work taken down and rebuilt was 400 feet long, with an average width of and an average height of 19 feet. This length was newly close-sheathed, and shoreward side of the same portion a new breakwater was built, 276 feet lo feet high. In the fiscal year 1899-1900 the sum of $4,199.89 was expended in ing the work of restoration of the main breakwater, a length of 216 feet of t end of the work, adjoining outwardly the portion of the work renewed, w down and rebuilt.

In 1900-01, the sum of $8,848.55 was expended in continuing the restor this work begun in 1898-99, and in removing gravel from the bottom of the between the two breakwaters; 184 feet in length was taken down and rebuilt bottom, an average width of 27 feet, and from 18 to 19½ feet high. The next shorewards, rebuilt the previous year, was floored, including stringers, caps and

In 1901-02, the sum of $3,999.99 was expended in continuing the work of tion begun in 1898-99. The outer 113 feet of the work was rebuilt practicall In order to straighten the outer block of the work, it was widened 24 feet at t end, the new block tapering to nothing 83 feet shorewards from the outer end in length also of the outer end of the work was close-piled on the north side to it against scour by the river which issues at this side. A considerable qua gravel was also removed from the river channel to improve the approach to the

In 1902-03, the sum of $942.41 was expended in completing repairs and to the breakwater in progress during the past two seasons. The work done the renewal of the upper portion of the outer end of the breakwater and in deepening the river channel alongside the outer end of the work.

In 1903-04, the sum of $300.99 was expended in protecting with close- length of 73 feet on the eastern side of the breakwater, that was undermine and waves during the previous winter.

Spring tides rise 21 feet, neaps 17 feet.

The total expenditure to June 30, 1904, was $36,031.89.

This work was transferred to the control of the Marine and Fisheries 12, 1888.

MIDDLE RIVER.

Middle River, Victoria county, is a large stream emptying into Indian bay, on he northern shore of St. Patrick's channel, an arm of the Little Bras d'Or lake.

About 5 miles from its mouth, the river flows through alluvial soil, easily acted pon by the strong current during freshets, and in consequence a large amount of aluable land has been destroyed.

The sum of $2,400 was voted for expenditure during 1903-04 in the construction f a shear-dam, built with piles, brush and stone, 600 feet in length, to divert the tream into an old river bed, and away from the valuable lands.

Plans and specification for the work proposed were prepared, and the materials equired were procured during the winter, but owing to the height of water in the iver, caused by spring freshets, the work of construction was not commenced until he middle of June, and on June 30, 1904, 200 feet of the pile-work was completed nd sheathed on the upper side, but the interior was only partly filled with brush nd stone.

The expenditure for the year ended June 30, 1904, was $1,405.35.

MUSQUODOBOIT.

The village of Musquodoboit, Halifax county, with a farming and lumbering popuation of about 500, is situated in and around the head waters of Musquodoboit harbour proper, and Petpeswick harbour, which at their extreme heads are only about a mile apart.

In 1901-2, the department expended the sum of $1,183.26 in building a small wharf for the convenience of the inhabitants of the district, and the shipment of lumber, of which some three million feet are annually exported, for the shipping of general farm produce and the loading of fuel and general merchandise. The work consists of a block of cribwork, 51 feet long, 17 feet wide and 14 feet high, with an earth nd stone approach 50 feet in width, 80 feet in length and of an average height of 9 eet.

In 1903-4, the sum of $271.39 was expended in completing to its full and proper idth the earth and stone bank approach. The total expenditure by the department to une 30, 1904, was $1,454.65.

NECUM TEUCH.

Necum Teuch (pronounced 'Necumtau'), Halifax county, is the name given to he settlement lying on the east side of Necum Teuch bay, at the mouth of Moser's iver. It is sixty-eight miles in an airline ENE., from Halifax, and six miles rom Salmon river. The population of the place embraces about 400 people, engaged n farming and lumbering. About 2,000,000 feet of deal and hardwood are sawn anually at Moser's river, at the head of the bay. A small coasting steamer makes eekly calls, landing freight and passengers at a detached block of cribwork in the tream, whence they are transferred in small boats to the settlement.

In 1902-3, the sum of $790.13 was expended in commencing the construction of a harf. The work done for this small expenditure consists of a road approach, about 00 feet in length constructed of earth embankment, and about 70 feet in length of ribwork at the shore end of the wharf.

In 1903-4, the sum of $4,421.45 was expended in completing the construction of he wharf. The work, which is of block and span construction, is 394 feet long and 0 feet wide, with an L on the outer end, giving a face length of 40 feet and a width f 30 feet. The shore block is 41 feet long, following it are seven blocks of 12 feet ach, two blocks 19 feet, and the outer block is 101 feet long. Between are ten spans f 13 feet each. All the blocks are substantially constructed of round-log cribwork,

filled solid with stone ballast, and well fendered and bolted. Along the outer fa face is 20 feet high giving about 16 feet of water at high water ordinary spring

Spring tides rise 6 feet, neaps 5 feet.

NEWELLTON.

Newellton, Shelburne county, is situated about two miles north-west of (harbour and has a population of about 350.

A wharf was constructed at this place in the fiscal year 1899-1900, with of affording adequate facilities for the several small steamers, which ply alon part of the coast and which, in the past, were unable to land passengers and f without serious discomfort and difficulty.

The wharf is 238 feet long and consists of a substantial rock-bank approac feet in length, 30 feet wide on top, 8 feet high at the outer end; two stone-fillle work blocks, each 19 feet in length, separated by a span of 11 feet, and seve bents placed 10 feet apart centre to centre. The width of the pile bents and cri blocks is 20 feet with a height of 23 feet at the outer end. The cost of this wo $1,999.99.

Owing to the heavy undertow it was very difficult for a vessel to lie inside structure which was under an almost constant severe strain.

In the year 1901-2, the sum of $399.59 was expended in repairing the sto proach and sheathing the outer pile-work with 4-inch deals fastened with 9-inch made of ¾-inch iron. This sheathing was, however, inadequate as the ice and made slight breaches in it, and the water flowing in and out soon threatened t of the wharf itself.

During the fiscal year 1903-4, the sum of $235.21 was expended to remed defect. The work performed consisted in removing the old sheathing, replaci bearing piles, renewing two pieces of guard-timber and the exterior stringer close-piling seventy feet in length of the outer end with spruce piles, 9 inches small end and from 23 to 30 feet in length. Spring tides rise here 9 feet and neap

NEW HARBOUR.

New Harbour, Guysborough county, is on the southern or Atlantic coast of Scotia, 30 miles to the westward of Canso harbour. It is merely a shallow bay to the southeast, at the head of which is the entrance to St. Catherine's river, able for boats 5 miles inland.

A contract, entered into in May, 1900, for the construction of a breakwa Black Point, on the western side of the bay, was completed September 27, 1900.

The breakwater consists of a stone embankment 160 feet in length and in average height, between the shore and 'Black Rock,' a stone embankment 8 in length and 18 feet in average height, in extension of 'Black Rock,' and 150 cribwork 25 feet in width, with creosoted substructure, and with a talus on th ward side sloping 1½ to 1 from high water.

The height of the cribwork over 15 feet of its width on the seaward side is and over 10 feet of its width on the inner side 3 feet 4 inches, above extrem water. The depth, at extreme low water, at the inner and outer ends of the cr are respectively 6 and 16½ feet. Spring tides rise 6 feet.

During a southerly gale in October, 1900, the outer section of stone embar was nearly destroyed, the cribwork was slightly damaged, and most of the stone talus on the seaward side of the cribwork was carried away.

In 1901-02, the sum of $3,693.04 was expended in repairing the cribwork, strengthening it by placing a second 6-inch covering over the covering of the in feet; in constructing a concrete wall, 89 feet in length, 12 feet in width, on to

10 feet in average height over the remains of the outer embankment, and another concrete wall 75 feet in length, 8 feet in width and 4 feet in average height over 'Black Rock,' and in slight repairs to the inner embankment.

In 1903, the sum of $5,999.77 was expended in repairing 50 feet of the concrete work between 'Black Rock' and the cribwork, by placing concrete where undermining had taken place; in reconstructing about 30 feet of the outer end of the stone embankment between the shore and 'Black Rock,' and in placing a talus of heavy stone (5 to 8 tons) on the seaward side of the outer concrete work and of the cribwork extension.

During the fiscal year ended June 30, 1904, the sum of $741.74 was expended, $475.51 in September and October, 1903, in completing the talus on the seaward side of the cribwork extension and in repairing and strengthening the road (side cutting and embankment) leading to the breakwater, and $205.48 in June, 1904, in placing a second covering over the outer section of the cribwork extension and in repairing and strengthening the stone embankment between the shore and 'Black Rock.'

The total expenditure to June 30, 1904, was $27,905.29.

NORTH INGONISH.

Ingonish (North), Victoria county, is on the north-east coast of Cape Breton Island, about midway between Sydney harbour and Cape North. It is separated from the south bay of Ingonish by a narrow, rocky and precipitous peninsula, over two miles in length.

On December 6, 1899, a contract was entered into for the construction of a breakwater off Archibald's Point, on the north side of the bay, for the purpose of forming a harbour of refuge for fishing boats, and the work was completed on December 20, 1900.

The breakwater is 484 feet long, with an L 77½ feet long, and from 18 feet at the inner to 24 feet wide at the outer end, it is constructed of squared timber, laid close-faced, with creosoted timber substructure, fully ballasted and fendered, the seaward face and end are sheathed and protected by a heavy stone talus.

During 1901-02-03, the stone talus, which was somewhat flattened out by the action of the sea, was raised, at a cost of $2,466.88.

During the fiscal year ended June 30, 1904, the sum of $542.76 was expended in the removal, by submarine blasting, of several large boulders near the outer end of the breakwater, which were a source of danger to vessels or steamers approaching or leaving the breakwater.

The depth of water along the face of the L, at low water springs, is 11 feet. Spring tides rise 4 feet.

The work has proved of great benefit to the fishermen of the district.

The total expenditure on this work to date was $30,558.56.

NORTH RIVER.

North River, Victoria county, empties into the northern arm of St. Ann's harbour, a commodious basin 7 miles in length and about 2 miles wide, with a great depth of water, at the head of St. Ann's bay, on the eastern coast of Cape Breton island.

The wharf constructed by the department at Seymour's Point, on the northern side of the mouth of North river, during 1898-99-1900, extends to 9 feet at low water, and consists of a road approach 64 feet long and 16 feet wide, of a block and span work 63 feet in length and 20 feet wide, with a return of 20 feet at its outer end.

All the bearing and mooring piles in the pile work were to be of creosoted timber, excepting the piles in the three inner bents, which being driven above the level of low water, and considered safe from the attacks of the teredo, were to be of spruce; but as there was a shortage of creosoted piling in the cargo received, and none could be

obtained in the island, the contractors were permitted to substitute native piling for three bents at the inner end, and the difference in cost was deducted the contract price.

An examination of the wharf, made on January 27, 1903, showed that some native timber bearing piles have been cut into by the teredo, and that the res much weakened, and in order to make the wharf safe for traffic, until it could b perly repaired, the sum of $45.88 was expended during the fiscal year 1902-3, i ing posts under the pile-caps in the six inner bents of the pilework to take the off the damaged piles.

The sum of $900 was voted for expenditure during the last fiscal year, in ing the native timber bearing piles with creosoted timber, and in renewing the wood fender piles. All the necessary materials were obtained and delivere owing to the difficulty of obtaining a suitable pile driver the work was not com by the end of the fiscal year. The amount voted and expended was $689.68.

Spring tides rise 6 feet.

The total amount expended on this work to June 30, 1904, was $3,099.11.

OGDEN'S POND.

Ogden's Pond Antigonish county, is on the western shore of St. George about 13 miles south from Cape George, and 9 miles north from the town of gonish. It is a small sheet of water, about 100 acres in extent, separated fro bay by a sand beach of from 130 to 250 feet in width.

For the purpose of rendering the pond which has a depth of over 10 feet water, accessible to boat and small craft, during 1900-01-02, a channel 30 feet wi 825 feet in length, was cut through the beach and the flat inside, down to a de about 1½ feet below low water, and a channel protection work, 350 feet in leng constructed in the northern side of the entrance. The work consisted of a bru stone embankment, 70 feet long and 8 feet wide on top, with sides sloping ½ a pile, brush and stone work 260 feet long and 10 feet wide, close-sheathed on t ward face; and of a round timber cribwork block 20 by 20 feet at the outc with creosoted timber substructure and close-sheathed in all outer faces.

On November 11, 1902, during a terrific north-east gale, the brush and st the work were washed out by the sea, and afterwards, for a distance of 130 fe piles were broken off and washed away, leaving the cribwork block at the outc uninjured.

During the fiscal year 1903-4, the sum of $1,449.87 was expended in replaci damaged pilework for a distance of 150 feet with cribwork, in refilling the b of the pile-work with brush and stone, and in placing a covering over all, and a quantity of ballast, about 160 cubic yards, was delivered, to be used in the pro to the channel through the flat, inside of the beach.

Total expenditure up to June 30, 1904, was $5,783.76.

PARKER'S COVE.

Parker's Cove, Annapolis county, is a small indentation on the southeast of the Bay of Fundy fifteen miles north-west of Digby Gut, and seven miles n Annapolis, the county town. The population of the settlement is about 250 peo gaged in farming and fishing.

In 1883-84, the department constructed a small breakwater substantially b round-log cribwork, stone-filled, 200 feet long, 23½ to 26 feet wide on top, and outer end 16 feet high, where at high tide there is a depth of about 11 feet of

In 1900-01, the department extended the breakwater a distance of 101 fee cost by contract of $3,749. The new block is 26 feet wide on top, and from 1(feet high, substantially built of round-log cribwork, filled with ballast, well fe close-sheathed on the seaward side and outer end.

In 1901-02, the sum of $73.50 was expended in placing a quantity of large stone on the eastern side of the breakwater, near its outer end, to prevent the waves from undermining the work.

In 1902-03, the breakwater was extended a further length of 130 feet, with an L on the outer end, having a face length of 82 feet. This work, which was built by contract, at a cost of $10,212.60, is from 20 to 29 feet high, the stem 26 feet wide and the L 30 feet wide on top. The landward side batters 1 in 6, while the eastward side is plumb and provided with a solid timber break 4 feet 6 inches high. The work was begun on June 11, 1902, and the whole work thoroughly well completed on November 20, of the same year. The extension is very strongly built of round-log cribwork, filled to the top with stone ballast, well fendered and bolted, and close-sheathed on the seaward face.

In 1903-04, the sum of $1,191.10 was expended in rebuilding the upper 2 to 4 feet in height, by 25 feet in width, of the shoreward end (the older portion of the breakwater) and in protecting the fore-shore on the eastern side of the work with large stone to prevent the sea from undermining the new block.

Spring tides rise about 30 feet.

The total expenditure to June, 1904, was $17,518.24.

PARRSBORO.

Parrsboro' is an important town, of about 2,800 people, situated at the right bank of the Partridge Island river, which empties into the north side of the Basin of Minas.

In 1901 a pier was constructed on the north side of the mouth of the river. It consists of an approach of gravel and clay 25 feet long; a block and span work 140 feet in length; pile work for a length of 170 feet, and a cribwork head 40 feet in length.

Owing to the strong current running through the pile work, vessels could not be moored on the inner side of the wharf.

During the fiscal year 1903-04, the sum of $922.10 was expended in closing the open pile-work with sheathing and also driving 34 fender piles on the outside of the sheathing.

Spring tides rise 40 feet, neap 33 feet.

PEMBROKE.

Pembroke, Hants county, is a small farming and lumbering settlement with a population of about 175, situated on the south shore of Minas Basin, 9 miles east of Cheverie and 3 miles west of Walton. The lumbering industry is represented by the annual shipment of about 3 million feet of deals and from five to ten thousand pieces of piling. As an aid to local business, and a protection to vessels loading and discharging, the department awarded a contract on March 28, 1904, in the sum of $7,970 for the construction of a breakwater. At the close of the fiscal year 1903-04, the work was half completed, the contractors having earned payments to the extent of $4,096.81.

Spring tides rise about 48 feet, neap about 40 feet.

PETIT DE GRAT.

Petit de Grat Inlet, Richmond county, lies between Petit de Grat island and the eastern extremity of Madame island. The main entrance is at the southern end from the Atlantic; the northern entrance, from Rocky bay, is obstructed by outer and inner bars, through which passages for boats at ordinary low water, were opened by the department between 1879-82.

During 1898-99-1900-01, both channels were widened and improved by hand dredging, and a cribwork protection was constructed on the western side of the outer channel.

At the end of June, 1901, the outer channel was about 350 feet long and wide, with a depth of 2 feet at low water, while the inner channel was 285 f 20 feet wide, and with the same depth as the outer channel. The protecti 298 feet in length, consisting of ordinary round timber cribwork, was fully but not covered.

The sum of $1,000 was voted for expenditure during 1901-2 for the recons of a portion of the protection work and for deepening the channels, but a found that the beach on the eastern side of the channel was moving rapidl westward, and had already encroached upon the channel, and the amount was not sufficient to check the movement, the amount was not expended, an decided to abandon the old work and to open a new channel to the westward

In 1902-3 the sum of $916.36 was expended in procuring materials for struction of a protection on the eastern side of the new channel.

During the last fiscal year the sum of $3,022.81 was expended in the cutt channel 285 feet in length, 20 feet wide in the bottom and to a depth of 2 fe low water springs, and in the construction of a protection work on the easter the channel, 200 feet in length, 12 feet wide for a distance of 160 feet, and 20 f for the remaining distance of 40 feet, constructed with round timber, fully and fendered, the outer end for a distance of 40 feet covered with plank, and ern face, the end, and the western face, for a distance of 40 feet from the o close-sheathed with hardwood plank.

Spring tides rise 6 feet.

Total expenditure to June 30, 1904, was $8,363.72.

PICKET PIER.

The Picket Wharf, King's county, so-called, is situated on the south sid mouth of the Habitant river, two miles below the village of Canning, and at t end of the village of Canard. It is conveniently placed with regard to a l thickly populated area of the richest fruit-growing and agricultural land Scotia.

The wharf was begun in 1845, and extended in 1859-60, by the inhabitan by the provinical government. Since these dates the department has expended in renewals and general repairs: in 1878, $500; in 1885, $100, and in 1886, $5

It is 190 feet long, 60 feet wide, and at the outer end, which is now abo below high water ordinary spring tides, it is 23 feet high. Spring tides rise neaps 40 feet. During the year 1896-97, the sum of $496.88 was expended very necessary repairs. The work done consisted of the rebuilding of the cri water along the outer face of the shoreward end for a length of 170 feet, fallen into decay and threatened to make an island of the main portion of th Portions of the top of the wharf were also filled up with stone and gravel, teams could come alongside vessels loading potatoes and other produce.

Since 1897, the work had become so dilapidated as to be practically use shipping purposes, and in 1903-04 the department accordingly expended the $2,309.65 in beginning the construction of a pile-work pier over and on to ancient cribwork structure.

On June 30, 1904, the work was about two-thirds done.

PICTOU LIGHT BEACH.

The beach forming the southern side of the entrance to Pictou harbour, k Pictou Light Beach, extends about one mile in a northerly direction, inclosing Cove, an inlet nearly dry at low water, except in a central channel. The o of the beach, on which stands a lighthouse and keeper's dwelling, is protect breastwork of squared timber, 450 feet in length, and by a work of brush a

tending from side to side of the beach, opposite the southern extremity of the breast-ork, and inclosing property under the control of the Department of Marine and isheries.

In 1894-95, the sum of $300 was expended in acquiring a title to a portion of the ach 1,520 feet in length, adjoining the property of the Department of Marine and isheries.

During 1898-99, a brush and stone-work 1,030 feet in length, 10 feet wide and 4 et in height was constructed along the beach to prevent its wearing away by the tion of the seas during gales ; and two groins, respectively 65 and 55 feet in length, mposed of piles, brush and stone, were built off the brush and stone-work for the rpose of gathering the sand.

In 1900-01, the sum of $522.77 was expended in the construction of a third groin, feet in length, opposite the end of the breastwork built by the Department of Mar-e and Fisheries, and 200 feet to the northward of the first groin, and in slight repairs the brush and stone work ; but the groin completed in November was undermined d destroyed during a heavy easterly gale early in December, 1900.

During 1901-02, the sum of $608.28 was expended in raising the brush and stone ork, which had settled, for a distance of 710 feet, and as it was found that the beach uth of the end of the work was wearing away, the protection work was extended for distance of 120 feet. The extension consists of brush and stone-work, 10 feet wide d of an average height of 4 feet.

Spring tides rise 6 feet.

The work for which the appropriation for 1903-04 was intended, viz., the recon-uction of the breastwork at the outer end of the beach, was performed during that ar by the Department of Marine and Fisheries.

PINKNEY'S POINT.

Pinkney's Point, Yarmouth county, is a small fishing and farming village of about 0 people, situated near the extremity of the headland between Chebogue river and ttle river, a distance of about twelve miles south south-west of the town of Yarmouth.

In 1901-02, the department expended the sum of $998.73 in constructing a small eakwater for the purpose of affording some small measure of protection to the fishing ats, and to serve also as a landing wharf for an occasional schooner load of general erchandise for local consumption.

The work consists of a block of round-log cribwork, 20 feet square, 14 feet high, th an approach 93 feet long, 20 feet wide and from 4 to 13 feet high, built of stone d walled up on each side with split boulders. The outer edge of the cribwork block dry at low water mark.

In 1902-03, the sum of $48.69 was expended in flooring the block of cribwork 20 et square, built the previous year, and placing 8 fenders.

In 1903-04, the sum of $68.26 was expended in replacing a large quantity of ge stones on the shoreward end and seaward side of the work, which were washed d lifted out of position by heavy waves and ice, during the previous winter.

Spring tides rise 12 feet ; neaps, about 10 feet.

PORT AU PIQUE.

Port au Pique is a thriving farming and lumbering settlement of some 400 or 0 people, situated on the north shore of the Basin of Minas, Colchester county, about ht miles west of Great Village and six miles east of Bass river. Hitherto, in the ence of a wharf, vessels coming to either load or discharge have had to lie aground the beach where they could be reached by teams at low water. This was a dangerous ctice and resulted in the destruction of several vessels in the course of the last y years. To encourage and develop local trade, and for the convenience of shipping,

the department in 1903-04, expended the sum of $543.62 in the purchase an of materials for the purpose of constructing a suitable public wharf of pil

Spring tides rise 50½ feet, neaps, 43½ feet.

PORTER'S LAKE.

Porter's lake is a long and narrow strip of fresh water, lying nearly south, situated about the middle of Halifax county, or about fifteen miles e provincial capital. It is about eighteen miles in length, from a quarter to a in width, and the water being of good depth for almost its entire length, i gable for vessels of about 60 tons, to the extreme head. The normal level o is some 2 or 3 inches above high water ordinary spring tides which, on the c rise 6 feet, and neaps 5 feet.

Up to about 1873 the outlet, which was directly into the Atlantic throug beach, about 200 feet wide, was navigable for schooners drawing 6 feet of a considerable trade was then done on the lake in the export of timber, lum wood, general farm produce and fish. Since that time the outlet has been and permanently filling up with the accumulation of gravel washed in by and easterly storms. In order to maintain the outlet, to prevent the roads margin of the lake from being flooded, and also to admit fish into the lake, t ing small expenditures have been made by the department :—

1881-82	$ 200 0
1884-85	200 0
1899-90	200 0
1892-93	147 0
1897-98	100 0
1898-99	200 0
1899-1900	150 0
1902-03	49 9
1903-04	325 1
	$ 1,572 1

These expenditures having resulted in but slight temporary relief an mament improvement, the department in 1900-01, expended the sum of $2, beginning the construction of a permanent channel through the neck of la feet wide, separating the main body of the lake from the extreme head Fathom Harbour. In 1901-2 a further sum of $5,987.24 was expended on manent outlet. In 1902-03 the sum of $2,455.67 was expended on the pe and $49.99 on the temporary (old) outlet.

In 1903-04 the sum of $325.15 was expended in several times reopenin outlet.

Total expenditure to date :—

On permanent outlet	$16,705 3
On temporary outlet	1,572 1
	$18,277 4

PORT GEORGE.

Port George, Annapolis county, is a village of some 400 people situate south of the Bay of Fundy, 37 miles north-east of Digby Gut, 42 miles sout Scott's bay, nine miles south-west from Margaretville, and seven miles n from Middleton on the Dominion Atlantic Railway.

Some years before confederation, the provincial government built a western akwater and an eastern pier or wharf. The breakwater is 440 feet long, from 25 35 feet wide on top, and at the outer end, where there is about 21 feet of water at ht water ordinary spring tides, it is 25 feet high. It is built of round-log stone-ed cribwork, the western or seaward face and outer end being closely sheathed.

The wharf on the eastern side of the little harbour is 205 feet long, 20 feeet wide l 18 feet high at the outer end. It is built of round-log cribwork, and the outer l, on which is built a small lighthouse, is closely sheathed. In 1874, the harbour s taken in charge by the Public Works Department, and in that and the following r the sum of $7,000 was expended in repairing and refacing the breakwater, which s much decayed. In the autumn of 1888, the outer end of the breakwater was des-yed by a severe storm, 165 feet in length being wrecked, and an additional length 30 feet being much injured. Before repairs could be made, a second storm des-yed the damaged portion, leaving 195 feet of the work a complete wreck, and ren-ing the harbour practically useless.

In 1900-01, the destroyed portion of the work was rebuilt by contract.

In April, 1894, an exceptionally severe northeast gale caused a serious breach in breakwater at about midway of its length, or immediately shorewards from the outer block. The breach was 40 feet long for the full width of the work, and ut 17 feet high; it was closed in the autumn of the same year.

In 1900-01, the sum of $400 was expended in repairing the eastern breakwater arf. The outer 30 feet in length was refloored, and the close-sheathing for the same gth was renewed. New fenders, guard timbers and mooring posts were also placed. e sum of $1,653.60 was also expended in the construction of a detached breakwater ut 200 feet eastward from the main end of the work. The object of this is to break seas and afford a much needed shelter to schooners lying alongside the breakwater.

In 1901-02, the sum of $2,297.46 was expended in continuing the construction of detached breakwater begun the previous year. The work thus extended measured feet long, 32 feet high at the lower end and 26 feet at the upper, 20 feet wide at . It is plumb on the seaward face and batters one in four on the back.

In 1902-03, the sum of $2,287.46 was expended in beginning the construction of an ension of 100 feet in length of this work.

In 1903-04, the sum of $5,807.95 was expended in completing the breakwater begun 1901 and in renewing the top of the 200 feet in length of the main breakwater a ght of from 3 to 5 feet. The detached breakwater is 200 feet long, 30 feet wide top and 17 to 32 feet in height. It is very strongly built of round-log cribwork, d with stone.

Spring tides rise 30 feet.

The total expenditure to June, 1904, is $37,605.46, including a refund to the vincial government in 1887-88, of $1,076.75. This work was transferred to the trol of the Marine and Fisheries Department on June 12, 1888.

PORT GREVILLE.

Port Greville, Cumberland county, is a village of about 300 people, situated miles west of Parrsboro. Important shipbuilding and lumbering interests are ated at this place, which are mainly dependent upon the security of its harbour.

The harbour is formed by a high gravel bar, lying parallel to the shore, inside of ch the river runs for a half mile before reaching low water mark.

For the purpose of protecting this bar, which was threatened with destruction, department, in 1874, constructed upon it a cribwork wall, 2,200 feet in length, 10 t wide on top with an average height of 7 feet.

In the fiscal year 1886-87, the department constructed a breakwater off the east end of the cribwork wall, for further protection to the harbour. It is 250 feet length, 21 feet wide on top with an average height of 20 feet and has a slope on

the seaward end of ½ to 1, whilst the seaward face and outer end were sheat 6-inch plank, well fastened.

In 1902-03, the beach protection work was rebuilt at a cost of $4,071.10.

During the fiscal year 1903-04, the sum of $697.59 was expended in rebu feet of protection work. Spring tides rise 40 feet, neap tides 34 feet.

PORT HAWKESBURY.

Port Howkesbury, Inverness county, is on the eastern side of the Strait nearly opposite Port Mulgrave.

The sum of $2,000 was appropriated for expenditure in 1901-2 towards struction of a wharf. During the year a survey was made and a plan an cation prepared for the reconstruction of a wharf known as the 'long whar

A contract was entered into on September 11, 1902, for the reconstructi 'long wharf' for the sum of $9,450.

The work under contract comprises the construction of an abutment 3 length, with end and side walls of stone; the reconstruction from 2 feet a water of 3,912 feet of block and span work, including 8 cribwork blocks 31 t in length and 22 to 24½ feet in width ; and the reconstruction and extensi 'head' including the removal to 2 feet above low water of parts of 2 cribwo and the construction of cribwork and pile 'head' 73 feet 9 inches in line of 112 feet.

Construction was commenced April 23, 1903, and satisfactory progress up to June 30, the same year, when the new cribwork over all blocks, excep was approaching completion, and when the estimated value of work perfor $2,780.

Operations were continued up to October 19, 1903, when it having be tained that ledge rock would prevent the construction of the pile 'head,' a was entered into for the removal of cribwork and ballast covering the site posed cribwork 'head' for $2,900.

The work was commenced October 12, and completed November 26, 19

Subsequently separate contracts were made for the removal of the outer the approach (damaged by ice) for $900, and for the construction of a 'head' in place of a pile 'head'; the reconstruction of the outer block o proach, and the construction of a roadway at the inner end for $6,700. O were resumed June 13, and were in progress at the close of the ficsal year.

The expenditure during the fiscal year 1903-4 was $8,122.50.

The reconstruction of the 'long wharf' was completed September 19, 19

PORT HOOD.

Port Hood, the shire town of the County of Inverness, is on the west coas Breton island, 20 miles north of the northern entrance to the Strait of Canso

A pier on the east side of the harbour, commenced by the provinical go in 1865, was originally 550 feet in length and 24 feet in width, with an 'L south side of the outer end, 100 feet in length and 25 feet in width. It ca the charge of the Federal government in 1871, since which time extensive re renewals have been made, including the construction of a new block, 125 by at the outer end, in 1873; the construction of a block 50 by 32 feet at the s of the 'L' in 1888-89; and the construction of a block 71 by 24 feet at the in 1889-90. The old provinical government work was of square timber, clo the additions and parts reconstructed by the department are of round timber l faced. The piers have been protected on the seaward side, at the outer end the south end and inner side of the 'L,' by close-piling, and on both sides 74 feet of the outer end by a stone talus.

In 1902-03, the sum of $199.99 was expended in urgent repairs, including replac- ballast where required and temporary repairs to the covering.

During the fiscal year ended June 30, 1904, the sum of $1,500.01 was expended repairing and strengthening the outer end of the pier. The work performed in- ded : close-piling (inside) and reballasting the face chambers at the outer end on seaward side near the outer end; repairing the covering, and renewing the close- ng at the outer end and on the seaward side in places.

The total expenditure to June 30, 1904, including $916.11 refunded to provincial ernment, was $61,592.20, and $2,078.58 for dredging.

PORT HOOD HARBOUR.

The harbour of Port Hood is on the west coast of Cape Breton island, about 20 es to the northward of the northern entrance to the Strait of Canso.

The harbour was formerly a secure one, Smith island, which forms its west side, ing been connected with the mainland by a range of sand hills. In 1893 the sea de a breach through this protection; the opening, at first narrow, was enlarged by tidal currents with increasing rapidity until it was entirely swept away. The har- r is now unsafe during northerly gales, except in a small cove on the east side of ith island.

In March, 1902, a report was submitted on the closing of the northern entrance which the estimated cost of work suggested varied from $482,000 to $291,000, ac- ding to design and location.

During the fiscal year 1903-04, the sum of $2,968.85 was expended in constructing ngth of 330 feet, 28 feet wide on top, of a proposed breakwater, and in procuring erials for its construction.

PORT HOWE.

Port Howe, Cumberland county, or Port Philip, as it is commonly called, is sit- ed about four miles west by south of Pugwash, and is a struggliug settlement from e to four miles in length with a population of about 500 inhabitants. The chief upation of these people is farming, although some small interests are engaged in bering and fishing.

The site of the wharf is at River Philip Bridge and is located along the flats bor- ng on the channel and running parallel to it. Much hay, tan-bark, &c., have in past been loaded here and the necessity of a wharf for the better handling of such modities was greatly felt.

During the fiscal year 1903-04, the department has constructed a wharf at this e at an expenditure of $1,964.19.

The wharf consists of three blocks of cribwork each 22 feet in length and 20 feet e on top and three spans, the first being 12 feet and the other two 15 feet in length. centre span has attached to it another crib 22 feet in length and 20 feet wide ch makes that portion of the work 40 feet wide. The height of the wharf at the r side is 23 feet average, and 14 feet on the inner side. The cribwork is built of d logs filled with stone and well fendered and fastened. Spring tides rise here 7 and neap 4 feet.

PORT LA TOUR.

Port LaTour, Shelburne county, is a fishing and farming community, situate 25 es south-west of Shelburne town, with a population of 700.

The harbour is about four miles long, north and south, and two miles wide, east west, and has a depth of water of from five to seven fathoms. The tides rise and spring 10 feet and neap 7.

Though the outer harbour, is somewhat exposed to the south-east (this be quarter from which the most destructive and severe gales arise), the inner formerly afforded some measure of shelter and protection to the northward ar ward of the sand-flats. lying between Page's island and Swain's point, on whi is from 6 to 8 feet of water at low water ordinary spring tides. Since, however usually heavy storm, some years ago, tore from these flats, the thick growth grass, with which they were covered, the undertow now washes over them. lying at anchor, awaiting a cargo or favourable wind, are in danger of d ashore, and the need of a protected anchorage is therefore unquestioned.

To most effectually meet this requirement, it was necessary to construct water, starting from Swain's point and running in a north-easterly direction.

The work was commenced during the fiscal year 1898-99, and continue years 1899-1900 and 1902-03. At the end of the fiscal year last mentioned, th water had been built on a length of 392 feet, 25 feet wide on top, with slo to 1 on the seaward side and 1 to 1 on the harbour side, the height ranging fr 17 feet, and the amount expended was $7,547,79.

The work consists of a stone embankment, with outer and inner walls g 5 feet in thickness, of large stone, the space between the walls is filled with stone, and the top of the middle part is finished with a layer of good gravel inches in thickness. On top of the outer wall, a break, generally 2 feet high, of cut granite on the whole length of the work.

During the fiscal year 1903-4, the sum of $1,097.64 was expended for the c tion of a further length of 40 feet of breakwater, the extension built is 25 f on top and 28 to 30 feet at bottom, 16 feet high at the inner end and 17½ fe outer end, or 700 cubic yards of rock work.

The total expenditure on this work, up to June 30, 1904, was $8,645.43.

PORT MAITLAND.

Port Maitland, Yarmouth county, is a prosperous and important fish farming village, with a population of about 600, situated on the southeast sid mouth of the Bay of Fundy, 12 miles north of the county town of Yarmout

The harbour works were begun about the year 1859, by the provincial gov They consist of an eastern and western or main breakwater of cribwork. Th is 400 feet long by some 20 feet wide, and the latter 500 feet long, 22 to 25 f with a return of 54 feet long, 24 feet wide and 27 feet high along which t depth of 19 feet at high water ordinary spring tides. These breakwaters inclose between them a snug high-water harbour of 2½ acres in extent.

In 1873-4, the eastern breakwater was raised and widened for a length of on the shore end, and an extension of 50 feet in length was built on the outc the western breakwater. In 1885-6, the sum of $349.92 was expended in ra outer end of the eastern breakwater, and in repairing and partly renewing th ing of the outer face of the western breakwater. In 1887-8, the western br was repaired and the following year, 1888-89, both sides of the breach were c and a number of fender piles were driven along the outer face and exposed of the broken work.

On June 24, 1890, a contract was made for rebuilding the destroyed sec repairing the other parts of the work. The seaward face, i.e., 83 feet in lengt the new work, and 100 feet between it and the shore, was close-piled ; the e was rebuilt and new fenders were fitted on the inside face. In 1891-2, th $296.45 was expended in repairing the eastern breakwater, and in 1896-7, repairs and renewals were made to both works. On the eastern breakwat also serves as a wharf for the landing and loading of general merchandise, c ber, &c., the shoreward 30 feet was rebuilt on the south side 6 logs high ar north side 3 logs high, including floor-stringers and flooring ; 22 feet in

he new covering was laid on the outer end, and a number of new fenders were bolted nto position. On the western breakwater, a re-enforcing block was built on the outh side of the outer end, 97 feet long, 11 feet wide and 12 to 14 feet high, or to height of about 10 feet below the floor of the work ; a re-enforcing block was also egun along the whole length of the L, 70 feet in length and from 10 to 12 feet ide. To obviate settlement, due to soft bottom, and the eating away of the bottom gs by the limnoria, it was built on 147 piles, driven to hard bottom and cut off level ith the beach. The inner or north side of the shoreward end was also strengthened nd rebuilt. In 1897-8, further repairs and renewals to the breakwater were made, ne re-enforcing block along the L of the western breakwater was completed to the ull height of the work, and the inner face of the outer end was renewed. The but-ess on the outer side was extended shorewards a length of 122 feet. On the end f the eastern breakwater the T was rebuilt 50 feet long, 20 feet wide, and built on 1 piles driven to hard bottom and cut off level with the beach. Various miscellan-ous repairs were also effected.

In 1898-9, thorough and extensive repairs to the western breakwater were com-leted, and 60 feet long on the inner face was close-sheathed, the buttress on the sea-ard side, 140 feet long was finished and several vacant spaces in the shoreward end ere filled with ballast.

In 1899-1900, the re-enforcing buttress on the outer end and seaward face of the reakwater, 96 feet long, 10 to 12 feet wide, to the full height of the work, was re-uilt. The lower 12 feet of this work, and the outer end of the work, were also heathed with 4-inch creosoted plank as a protection against the limnoria.

In 1900-01, a piece of buttress on the seaward side of the breakwater, 90 feet ng, 19 to 20 feet high, and from 10 to 11 feet wide, adjoining shorewards the piece feet long which was built the previous year, was constructed. The outer face of e new piece of buttress was also sheathed 12 feet high with creosoted 4-inch plank, a protection against the limnoria.

In 1901-02, the sum of $299.44 was expended in close-sheathing with 5-inch plank length of 110 feet of the shore end of the seaward face of the breakwater from nich the old sheathing had been stripped away by heavy seas earlier in the year.

In 1903-04, the sum of $1,503.25, was expended in raising to the full height of the reakwater, the buttress on the seaward side for a length of 65 feet and a width of feet, and height of 14 feet. Also the taking down, rebuilding of an equal length feet, to a height of 8 feet, of the main portion of the breakwater that was very uch decayed.

The total expenditure to June 30, 1904, was $27,005.01, including a refund of ,971.66 to the provincial government in 1887-88. This work was transferred to the partment of Marine and Fisheries on June 22, 1885.

Spring tides rise 18 feet and neaps 15 feet.

POULAMOND WHARF.

Poulamond, Richmond county, is situated on Madame island, on the southern de of the Lennox passage, a strait separating Madame from Cape Breton islands, nd conecting St. Peter's bay with the Strait of Canso ; and is about one mile to e westward of D'Escousse.

During 1892-3-4, a wharf was constructed consisting of a stone approach 315 et in length and 16 feet wide, a stone embankment 107 feet long and 20 feet wide top, with sides and outer end sloping 1½ to 1, and a creosoted pile extension 120 et in length and 22 feet wide with an 'L' 21 by 29 feet, at the outer end. The pproach to the wharf was deepened by dredging.

During 1895-6, a landing slip was cut on the western side of the outer end of he pile extension to facilitate landing and shipping during low water.

The sum of $334.97 was expended during the fiscal year 1903-04, in renew covering, the cap, and eight fender piles on the pilework ; in raising, gradi draining the approach, and building a small warehouse on the L.

The depth at the outer end of the wharf is nine feet at low water sprin which rise 6 feet.

Total expenditure on this work up to June 30, 1904, exclusive of the dredging is, $6,085.15.

PROSPECT.

Prospect, Halifax county, is a settlement of some three or four hundred situated on the Atlantic coast, 15½ miles in an airline southwest from Hali miles by public road and about the same distance by water. The land in the bourhood being very sterile and rocky, and quite unsuited to agriculture, the i ants are wholly dependent for a livelihood upon fishing, which is an import dustry, large quantities of lobster, cod, haddock, mackerel, herring and other ing caught and exported. The cove, around which the village is built, and carries a depth of from 10 to 15 feet of water at low water ordinary spring t a quarter of a mile long and from two to three hundred feet wide. Its mouth protected from the open sea by Saul's island and by numerous reefs and shoals, heavy seas cannot enter. Around the cove are numerous small, flimsy wha stages, for the landing and curing of fish, but not only is there insufficient d water at these stages, but, belonging to private individuals, merchants and the public importing flour, coal and other merchandise, have in the past been obl unload their goods from schooners lying at anchor in the harbour, into boats a them ashore as best they could.

In the fiscal year 1902-03 the department expended the sum of $767.26 in t struction of a small wharf of pilework.

In 1903-04, the department expended the sum of $453.62 in completing th It consists of a pile-wharf, 61 feet long by 25 feet wide with an 'L' giving length of 55 feet. At the outer end, which is 18 feet high, there is a depth o 10 feet of water at low water ordinary.

Spring tides rise 6 feet, neaps 5 feet.

RAGGED HEAD.

Ragged Head, Guysboro county, on the north side of Chedabucto bay, east of Guysboro harbour, is a triangular sheet of water with an area of abo acres and a depth of from 2 to 5 fathoms. It is inclosed by shingle beaches, t which there is a narrow channel on the western side of Ragged Head.

During the years 1878-83, the channel was improved and protection work sisting of 110 feet of cribwork and 428 feet of brush and stone work, were cons on the southern side. In 1899-1900 and 1900-01 small amounts were exper repairing the cribwork and in deepening and re-opening the channel.

In 1902-03, the sum of $1,000 was applied in constructing a cribwork bl feet in length, 16 feet in width on top, and 11 feet in height, in extension channel protection work and in re-opening the channel.

During the fiscal year ended June 30, 1904, the sum of $200 was expended proving the channel by hand dredging.

The total expenditure to June 30, 1904 was $6,344.97.

The surface of the pond is 3 feet higher at low water inside than lov outside ; consequently there is a fall at low water of 3 feet in the length channel (600 feet). The depth in the channel at low water is about 3 feet, near the entrance, where it is about 1 foot.

RED HEAD.

Red Head, Shelburne county, is situated about two miles west of Roseway and velve miles south-west of Shelburne. It is a fishing station of some considerable nportance.

At this place a beach of shingle about half mile in length separates a small lake om the sea-shore. In former years, a channel existed across the beach, through hich the fishermen could enter the lake for protection and shelter.

About the year 1840, the provincial government undertook to prevent this chan-l from being filled up, and built a small groin of stone-filled cribwork along the west-n side of the channel from the lake to within 40 feet of low water ordinary spring des outside. This work was not successful and about the year 1855 the channel was ntirely closed.

Examinations and surveys of this place, showed it to be necessary, in order to fect a permanent haven, that the channel should be reopened, and cribwork protec-on walls be constructed along both sides of the channel, for its entire length.

During the fiscal year 1899-1900 this, together with the excavation necessary for proper channel, was performed at an expenditure of $2,097.87.

The work done consisted of, the excavation for the channel 306 feet long 20 feet ide and from 4 to 8 feet deep, and the construction of two cribwork walls. The west-n wall is 316 feet in length, 10 feet wide on top and had an average height of 9 feet, hilst the eastern wall is 266 feet in length 10 feet wide on top, and of an average ight of 9 feet.

During the fiscal year 1903-04, the sum of $400 was expended, in extending the estern wall an additional length of 60 feet. This addition was constructed of a milar kind of cribwork as the former works, it is 10 feet wide on top, 12 at the bot-m and has a height of 10 feet. This extension was found necessary owing to the each having shifted somewhat and the channel was fast becoming filled up. About 0 cubic yards of small stones and gravel were removed from the channel. Spring des rise 7 feet, neap 5½.

SANDY COVE.

Sandy Cove, Digby county, is a thrifty and beautifully situated fishing and farm-g settlement, of some 400 people, situated on Digby Neck, nineteen miles south-west Digby town.

On February 12, 1903, a contract in the sum of $13,000, was awarded by the de-artment, for the construction of a breakwater in the cove, on the eastern, or Bay of undy side of the neck, with the object of affording some much needed shelter to the shing fleet. On June 30, 1904, the value of the work done was $9,232.

The breakwater, when completed, will be 211 feet long, 30 feet wide on top and 1 feet high at the outer end where, at high water ordinary spring tides there will be bout 27 feet of water. The work is designed to be of solidly built round-log crib-ork, the lower portion, up to 5 feet above low water ordinary spring tides, being of reosoted timber to resist the attacks of the limnoria, which are here prevalent and estructive.

Spring tides rise 23 feet, neaps 19 feet.

SCOTT'S BAY.

Scott's Bay, King's county, is on the south side of Minas channel, Bay of Fundy, etween Cape Split and Baxter's harbour. The population of the settlement, within radius of a couple of miles is about 500.

In 1878-79 the department built a block of cribwork 50 feet long, 30 feet wide and bout 20 feet high, connected with the shore by a double row of close-piling, 210 feet

long, from the south-east corner of the block ; the cribwork was built of clos work, well fendered and ballasted. The work was located on the west side creek, and formed a harbour or shelter for vessels during south-west storms.

As it had no floor, much of the ballast has been removed, presumably for ba schooners. Both the block and close-piling are more or less dilapidated ; 30 length of the close-piling and the upper 15 feet in height of the block being tota troyed. The expenditure on this block and the close-pile work by the departn 1867-1882 was $3,000.

In 1900-01 the department expended $500 in building two blocks of cribwo on either side of the mouth of the creek. The northern block is 115 feet long, high and 19 feet wide; also in extending the south breakwater by a block 75 fe 10 to 12 feet high and 12 feet wide. Some minor repairs were also made to th portions of the northern breakwater.

In 1903-04 the department expended the sum of $1,346.52 in further improv The work done consists of the construction of a new block of cribwork in ex of that built in 1901-02, 57 feet long, 20 feet wide and from 16 to 21 feet high, raising to full height and finishing the new block on the south side of the creek in 1901-02.

On June 30, 1904, the work was not completely finished owing to the diffic commencing work early in the season.

Spring tides rise about 48 feet, neaps 40 feet.

SHAG HARBOUR.

Shag Harbour, Shelburne county, is a scattered village of about 600 inha on the Atlantic coast, about 6 miles north-west of Barrington and about 4 south-east of the town of Yarmouth. The occupation of the people is chiefly and but little farming. In the year 1899-1900, the department commenced t struction of a wharf at this place. The sum of $1,950.93 was expended but th ture was not completed.

During the fiscal year 1903-04, the wharf was completed with an expend $337.63.

The wharf consists of a rock-bank approach, 53 feet in length, 25 feet top and 10 feet high, the wharf proper is 221 feet in length, 20 feet wide, wi or return 20 feet by 20 feet, the height at the outer end is from 19 to 20 fee constructed of pile-trestle bents, 10 feet apart from centre to centre of pil braced, waled and fendered.

Spring tides rise here 10 feet, neaps 7.

SOUTH GUT.

South Gut, Victoria county, is the local name for the southern arm of t of St. Ann's harbour, at the head of St. Ann's bay, on the eastern coast Breton island.

A wharf was constructed during 1890-91 on the southern side of South G feet in length and 20 feet wide, extending to 6½ feet at low water, and consi a shore abutment 48 feet long and of four 20-foot blocks, built of native timber c with intervening spans 17½ feet in length.

In order to render the wharf accessible, at all times of tide, to the steame calls here twice a week on her trips from the Sydneys to the north shore, the same time to facilitate team traffic on the wharf, during the fiscal year an additional block, 20 by 40 feet was placed, 20 feet from the end of the wh connected with it by a span. The depth of water at the outer end is now 8 low water spring tides, which rise 6 feet.

During the fiscal year 1903-04, the covering, the cap and the fenders on wharf were renewed, and the approach was graded and gravelled, at a cost of

Total expenditure to June 30, 1904 was, $3,999.27.

SOUTH INGONISH.

Ingonish Bay, Victoria county, is situated on the eastern coast of Cape Breton d, about midway between Sydney harbour and Cape North. It is divided into n and south bays by Middle Head, a narrow, rocky neck of land over 2 miles in th.

At the head of South bay there is an extensive lake, separated from the sea by ach, through which there formerly existed but a shallow channel.

In 1873, works were undertaken by the department for the improvement of the nel. On their completion in 1876, there was a channel 200 feet in width, with a h of nowhere less than 14 feet, at low water, and with its northern side pro- d by a pier 500 feet in length, thus giving vessels access to the lake, which has rea of about 400 acres and a great depth, and affords a safe and commodious har-

The pier, on which small sums were expended every year from 1876 to 1880, and amounts in 1881 and 1882, sustained serious damage during heavy easterly gales 882 and was subsequently carried away down to below low water.

In 1886-87 an anchor and mooring buoy were placed in the harbour, near the ance, and a beach protection work 58 feet in length and 20 feet in width was tructed on the northern side of the entrance, to prevent the sea from cutting the end of the beach, and open up a channel between it and the remains of the breakwater; during 1894-95, a breach at the back of the beach protection work closed with a cribwork block 45 feet in length and 15 feet in width, and brush stone placed at its sides.

In 1893-94 a public wharf was constructed on the northern side of, and near the ance to the harbour, consisting of a block of cribwork 31½ feet wide on top and feet in length, with an approach of brush and stone, 45 feet in length and 20 feet The depth of water at the outer end at extreme low water is 8½ feet.

During a severe gale, accompanied by an extraordinary high tide, on February 4, the beach separating the harbour from the bay was swept from end to end. Nearly e buildings and private wharfs were destroyed and carried away, but the public s were not disturbed, with the exception of some settlement in the slope on the ard side of the beach protection work.

Since the destruction of the breakwater in 1882, the channel has been gradually acting and getting shoaler but it is still some 70 feet in width and has a depth feet at low water. Spring tides rise 4 feet.

On February 28, 1903, a contract was entered into for the sum of $2,485, for the ruction of a wharf on the southern side of the harbour, near its entrance. The was commenced on September 4, and brought to a satisfactory completion on ber 21, 1903.

The new wharf is 160 feet in length, extending to 16 feet at low water, and con- of a shore abutment and four cribwork blocks, with intervening spans. The abut- and the three inner blocks are 16 feet wide, and the outer block, which forms the 30 feet by 30 feet, all are constructed of round timber, laid open-faced, and the block has a creosoted timber substructure and is close-sheathed on all outer

The total expenditure to June 30, 1904, for work at this place, not including cost w wharf, was $93,696.31. The expenditure during 1903-04, was $2,590.

SPRY BAY.

Spry Bay, Halifax county, is a thriving fishing and farming settlement of about inhabitants, situated about seventy miles east of Halifax city and eight miles of Sheet Harbour. It contains four stores, two lobster packing factories, hotel

and telegraph. The harbour is free from ice all the year round, and, during the ter, freight for Sheet Harbour and points east, has to be landed here on account other adjacent harbours being closed by ice. There is a considerable trade all the round. Hitherto, owing to the absence of a suitable landing pier, the weekly st has been obliged to tie up at a flimsy and inconvenient landing, which, owi shallow water, is approached with difficulty.

In 1903-04, the sum of $508.94 was expended in the purchase and deliverey timber preparatory to the construction of a suitable wharf.

Spring tides rise 6 feet, neaps 5 feet.

SWIM'S POINT.

Swim's Point, Shelburne county, which is practically a continuation of C harbour, is situated, one and and one half miles east of the last named place.

The wharf at this place consists of a stone approach, 35 feet in length, 2 wide on top with a graded covering of 6 inches of coarse gravel, and 178 feet in of alternate block and spans. The wharf is 20 feet wide except the last 25 feet length which is 40 feet wide, forming an L at the outer end. The height of the end of the work is 25 feet, the flooring being 4 feet above high water ordinary tides.

The people of Clark's harbour have been desiring the ss. 'Senlac,' which pli tween St. John and Halifax and intermediate ports of importance, to call here the wharf was too small to accommodate such sized steamers.

During the fiscal year 1903-04, the sum of $1,214.56 was expended for th struction of part of an additional length of 25 feet to the existing wharf. On 30, about two-thirds of the new work had been built and the necessary materi complete it were on hand. The new work when completed will be 40 feet wi 25 feet long with a height at the outer end of 29 feet. It is built of cribwork s in character to the former work. The depth of water at the outer end will be greater than formerly. Spring tides rise here 10 feet, neaps 7 feet.

SYDNEY QUARANTINE STATION.

The Quarantine Station in Sydney harbour is on the southern arm, near ing Point and about three-fourths of a mile from Point Edward, at the extrem land lying between the south and west arms.

The wharf built by the Department of Marine and Fisheries and repair extended in 1903-04, is a block and span structure, extending 148 feet to 8 feet water. Spring tides rise 5 feet.

During the fiscal year 1903-04, the sum of $1,566.04 was expended in pro creosoted timber and other materials for the repairs and extension of the wharf

TANCOOK.

Big Tancook, Lunenburg county, is the largest of a host of small islands hone bay, on the coast of Lunenburg county. It is about 2½ miles in extreme north and south, by about a mile in width, east and west. It is nine miles north- the town of Lunenburg; the same ditance south-east from Chester and about 2½ south-west of the Aspotogon peninsula, which is the nearest mainland. The isla a population of about 600 people, for the most part dependent on fishing, but d considerable amount of farming in the way of raising early vegetables.

The breakwater, which is situated on the north-western side of a large c the northern end of the island, was built in 1873, at the joint expense of the D ment of Public Works and the provincial government, each having expended It is 200 feet long with a spur at the outer end, having a face length of 95 feet,

built partly of piles and partly of cribwork, the first 165 feet being of cribwork, and the remainder including the spur or L of piles. In 1887-88, repairs and renewals were effected. 1899-1900, thorough repairs and renewals to the cribwork portion of the structure were made.

In 1901-02, the department expended the sum of $936.48 in completing the repairs to the wharf begun last year. The work done consisted of the renewal of the pile-work in the outer portion of the wharf and the reflooring of the whole outer end of the L.

In 1903-04, the sum of $195.99 was expended in driving 35 new piles to replace those broken by ice the previous winter, the placing and bolting of 47 running feet of waling, 55 feet in length of new guard timbers, and sundry repairs to planking.

TENECAPE.

Tenecape is a scattered farming district on the south shore of the Basin of Minas, Hants county, situated about half way between Walton and Noel, or about 6 miles distant from each. The population of the place within a radius of a couple of miles is about 200 people. A small lumbering industry ships about 300,000 feet of lumber annually. A small amount of fishing is also done. The nearest railway station is distant about 13 miles. Most of the local trade is carried on by water. The nearest wharf is about 6 miles distant, and hitherto, vessels loading and discharging had to ground on the mud flats at the mouth of the river, where they were much exposed to seas from a northern direction. On May 17, 1904, the department awarded a contract in the sum of $8,370, for the construction of a suitable breakwater to serve both as a landing pier and a shelter. On June 30, 1904, work to the value of $2,019.48 had been accomplished.

Spring tides rise about 50½ feet, neaps 43½.

TIVERTON.

Tiverton, Digby county, is a village of some 400 people mostly engaged in fishing, but doing also some little farming, situated on the west side of Petit Passage, separating the main line of Digby Neck from Long island. It is about 30 miles southwest of Digby town, and 10 miles from Sandy cove.

On February 12, 1903, a contract (No. 4543) in the sum of $17,000 was awarded by the department for the construction of a breakwater to afford shelter to the fishing fleet. The work, which was completed in January, 1904, is 281 feet long, 30 feet wide on top, and at the outer end 33 feet high, where at high water ordinary spring tides, there is about 29 feet of water. The whole is substantially built of round-log cribwork, the lower portion up to 5 feet above low water ordinary spring tides is of creosoted timber to resist the attacks of the limnoria.

The sum of $110, was paid to the contractors on 'extras,' viz., $50 for carrying floor of the breakwater out over the lower end of the inclined slip, and $60 for treating the upper timbers with creosote.

Spring tides rise 21 feet.

At the end of the fiscal year, the sum of $15,308 had been paid to the contractor.

TRACADIE.

Tracadie Harbour, Antigonish county, is on the southern shore of St. George's bay, 12 miles east from the entrance into Antigonish Harbour, and 11 miles to the westward from the northern entrance to the Strait of Canso. It is separated from the bay by a series of islands and connecting beaches of sand and gravel, and its entrance was formerly to the westward of Delorey island, by a narrow and crooked channel with 2 feet at low water ; but in 1863 the provincial government opened a passage

by dredging at the eastern end of the harbour, through a beach which conne mainland with Delorey island and constructed a breakwater on its eastern s

During 1874-75 the department repaired and extended the breakwater, a structed a retaining wall of cribwork to the southward of it to prevent erosio bank. Slight repairs were made from time to time up to 1884-85, when th water was repaired and strengthened by close-piling, and the retaining wal had been destroyed, was reconstructed.

The breakwater, weakened by the ravage of the teredo, was badly dam 1889, and in the following year, the whole of it, excepting a portion of the sou 67 feet in length, was destroyed. During 1892-93, 50 feet of the south face of maining portion was repaired and strengthened by close-piling.

The destruction in 1890, of the greater portion of the breakwater, invol shifting of the channel at the entrance (originally carrying 6 feet at low 500 feet to the westward and the wasting away of the beach, and consequent land to the eastward by erosion.

To prevent further loss of land and to improve and protect the entrance, 1898-99-1900, the remaining portion of the old breakwater was repaired and thened and a side extension 100 feet in length, consisting of round timber cr with creosoted timber substructure, and close-sheathed on the seaward fac constructed.

During 1901-02-03, the retaining wall was re-ballasted, and a cribwork 's feet long and 16 feet wide on top, close-sheathed on all outer faces, was buil southern end, to deflect the tidal currents off the bank into the channel.

The sum of $381.64 was expended during the year 1902-03 in raising, ba and covering 52 feet of the shore end of the breakwater, in covering the re wall 187 feet long and 10 feet wide with spruce poles, and in sheathing the ou of the retaining wall for a distance of 30 feet from its junction with the 's

The reconstruction of the breakwater has had the effect of restoring the b the eastward, nearly to its original condition, and of deepening the channel entrance.

During the fiscal year ended June 30, 1904, the sum of $425.28 was ex in the reconstruction of the inshore end of the breakwater for a distance of in close-sheathing the new work and 15 feet of the old work adjoining it, and ing brush and stone in the angle formed by the inner end of the work and t bank, to prevent the sea from cutting through.

Total expenditure to June 30, 1904, including $1,228.69 refunded to pro government, and cost of dredging is $25,364.95.

UPPER PORT LA TOUR.

Upper Port La Tour, Shelburne county, is a small village of about 300 tants, situate two miles north-east of Port La Tour proper.

In the fiscal year 1898-99, the department commenced the construction of a which was completed in the next fiscal year. The total amount expended up work in these two years was $2,699.85.

The wharf was 273 feet long and 20 feet wide. It was made up of a roc approach 38 feet long and 25 feet wide, eight 18-foot cribwork blocks and seven spans, with a common width of 20 feet and a height at the outer end of 18 fee cribwork blocks are built of round-logs, filled to the underside of the floor st with heavy stone ballast, well fastened and heavily fendered.

Since its construction, this wharf has been much used, and as several co steamers called there, it was deemed necessary to extend the wharf to deeper w that it could be approached by these steamers at practically any time of tide.

During the fiscal year 1903-04, the sum of $800 was expended in the construction of an extension to the wharf, 37 feet long, consisting of a span of 15 feet and a block 22 feet in length by 20 feet wide, also a span and a block of the same dimensions forming an L at the outer end, thus making the outer face 57 feet long. The crib is of the same nature as that previously built.

The height of the work at its outer end is 22 feet.

WASHABUCK CENTRE.

Washabuck, Victoria county, is a district on the south side of the eastern end of St. Patrick's channel, an arm of the Little Bras d'Or lake, and extends about six miles along the shore. As the name implies, Washabuck Centre is situated near the centre of the district.

In order to facilitate the shipment of agricultural produce and cattle, from the district, on April 6, 1903, a contract was entered into for the sum of $5,860, for the construction of a wharf at this place.

The work of construction was commenced on July 1, 1903, and was brought to a satisfactory completion on September 9, following. It consists of a block and span wharf, 218 feet in length, extending to 12 feet at low water, 20 feet wide, with an L at the outer end 20 by 20 feet ; and of a road to connect it with the public road, 102 feet long, on the centre line, and 20 feet wide, fenced in on each side. The blocks and the shore abutment are constructed of round timber cribwork, laid open-faced, with creosoted timber substructure, and the two outer blocks are protected by close-sheathing on their outer faces.

Expenditure for the fiscal year 1903-04, was $6,055.

WEDGE POINT.

Wedge Point is the southern extremity of the peninsula called 'Tusket Wedge,' three miles long, north and south, by half a mile to a mile wide, east and west, situated some ten miles south-east from Yarmouth, the county town. The population of the peninsula comprises some 500 people, the majority being engaged in, and more or less dependent upon, the fisheries. On the east side of the peninsula there was no shelter or protection whatever for the fishermen, of whom there are a considerable number, and they were obliged to keep their boats in Goose bay, on the western side.

In 1902-3, the sum of $1,000 was expended in commencing the construction of a breakwater. The work was 119 feet long, 19 feet wide and from 5 to 12 feet high; it is substantially built of round-log cribwork, well-fendered and ballasted and close-sheathed on the seaward side.

In 1903-04, the sum of $1,701.61 was expended in building an extension to the breakwater built in 1902-03. The new block is 100 feet long, 19 feet wide on top and from 12 to 15 feet high, well and substantially built of cribwork, sheathed on the seaward side and filled solid with stone.

Total expenditure by the department to date was $2,701.61.

Spring tides rise 12 feet; neaps, 10 feet.

WEST BACCARO.

West Baccaro, Shelburne county, is about three miles west of the village of Port La Tour, and has a population of about 400, mostly engaged in the fishing industry. It is one of the roughest spots on the coast of Nova Scotia. In the past the fishermen have pursued a very hazardous calling, and have been handicapped by the lack of a safe mooring harbour for their boats, often having to stand on the shore and watch their boats and other property being destroyed by the storms. To lessen the dangers of their calling and obviate further loss, the department decided to convert a pond

partly available at low tide into a boat harbour by the construction of p works around it on its exposed sides and excavating a channel on the inner be protected so as to prevent its filling in again.

With this object in view, the sum of $1,999.99 was expended in the year 1

During the fiscal year 1903-04 the work was completed with an additional ture of $3,500.

The work consists of a cribwork protection on a length of 1,055 feet, 8 f on top and from 4½ to 12 feet high. It is built of round logs, filled with ston fendered every 10 feet. A channel was also made from inside the pond to l ordinary spring tides outside, a distance of 225 feet, on a width of 25 feet and of 3 feet.

Spring tides rise 9 feet, and neaps, 7 feet.

WEST BAY (SOUTH).

West Bay (south), is situated on the south side of West bay, the south-wes of the Great Bras d'Or lake.

'The Points,' so called from the number of headlands projecting into t side of West Bay, is a scattered settlement, extending along the shore for a of four miles, and the centre of the settlement is about twelve miles eastward West Bay port, at the head of the bay, and fifteen miles northerly from St canal.

A contract was entered into on September 1, 1903, for $2,980 for the cons of a wharf at 'The Points,' it is to be 250 feet long, 20 feet wide, with the o in 12 feet at low water.

Work was commenced on June 13, 1904, and up to the end of the fiscal yea bearing and mooring piles were driven and capped, the outside floor-string placed and secured, the outer twelve bents were braced, and the cribwork a was placed and partly ballasted.

Expenditure, $1,747.98.

The work was completed and accepted on July 26, 1904.

WESTERN HEAD.

Western Head, Queen's county, is a fishing settlement, situated on the so of Liverpool bay, about four miles south of Liverpool.

In 1887, the department began the construction of a stone breakwater, and the following year completed the same. The breakwater was constructed en large stones, quarried for the purpose ; a portion of the work, from low wat being built of selected stone, firmly bolted together with iron dogs. The wh at that time was 190 feet in length and 40 feet wide on top.

Soon after the breakwater was completed, 100 feet in length of the outer destroyed, and in the following fiscal year, 1889-90, the sum of $5,000 was expe rebuilding it. The projecting points of the reef were cut away, a bed was prep a foundation course, which was built down to the bed-rock, and the intersti filled in with Portland cement concrete. Each succeeding course was laid in s manner. The top of the breakwater for 5 feet above high water and the surf finished smooth. The total length of the breakwater built in that year was making the breakwater 196 feet in length over all.

During the fiscal year 1898-99, the sum of $965 was expended in repair work. The older portion of the breakwater, 90 feet in length, 29 feet wide, average height of 8 feet, was practically rebuilt, and also material repairs we to the newer work built in 1889-90.

During the year 1902-03, the extension of this work was begun and the $2,960.05 was expended. During the fiscal year 1903-04 an additional sum of

was expended in completing the extension, making a total expenditure in the two years of $6,614.20.

The extension is built of very large stone for a thickness of 6 feet on both sides, and slightly smaller ones in the centre, all laid in cement. It is 97 feet in length, averages 13 feet in height and is 23 feet wide on top and 28 on the bottom. Spring tides rise here 7 feet, neaps 5 feet.

WEST PUBNICO.

West Pubnico Harbour, Yarmouth county, is situated some 30 miles south-west of Yarmouth; it is about 8 miles long from mouth to head, lying due north and south, and from three-quarters to a mile and a half wide.

On the west side of the harbour and about 3 miles above its mouth, a wharf was built by the department in 1885-6 to 1886-7. The work consists of a stone and gravel causeway, 285 feet long, followed by a wharf 230 feet long, of pile bents. The bank is 25 feet wide by an average height of 4 to 5 feet; the wharf is of the same width and from 10 to 14 feet high. At low water ordinary spring tides the mud flats are bare for over 1,000 feet beyond the end of the wharf.

In 1900-01 the sum of $2,025 was expended in repairs and extensions, the work done being as follows:—

(a) The raising and gravelling of the stone approach, 290 feet in length; many of the top stones, which had been displaced, were renewed, and from 6 to 18 inches of fresh gravel was laid.

(b) The thorough repair of the older portion of the work, comprising new fender-piles, guard timbers and transverse bracing. The whole of the floor was taken up and relaid, about one-half of it with new plank.

(c) The construction of an extension 167 feet long of equal width and similar construction with the old work, viz.: 25 feet wide and of pile-bents. The outer end of the work, which is all of pile-work, is now 15 feet high, carrying a depth of water of about 12 feet at high water ordinary spring tides.

(d) The placing of three dolphins, consisting of 4 piles each, from 500 to 1,200 feet distant from the wharf to mark the positions of rocky ledges. The piles forming each dolphin are strongly chained and bolted together at the top and painted.

The total length of the pile-work is now 397 feet.

In 1903-04 the sum of $98.12 was expended in lowering back into place about 50 feet in length of the shore end.

Spring tides rise 12 feet, neaps 10 feet.

Total expenditure to June 30, 1904, was $4,371.75.

WEST WOODS HARBOUR.

West Woods Harbour, Shelburne county, is a small village of about 200 people situated about 2 miles direct west of Middle Woods Harbour. The people here had no means of landing their goods and had to drive about 6 or 7 miles to the nearest shipping place for their provisions and other necessities. During the fiscal year 1903-04, the department expended the sum of $686.93 in partially constructing a wharf here, which would have been completed but for the difficulties in procuring materials and the high cost of transportation of same.

When completed the wharf will consist of a rock-bank approach 18 feet in length, two cribwork blocks each 20 feet long and two spans of 15 feet each, making a total length of 98 feet. The rock-bank is 24 feet wide, and 9 feet high at the outer end and the cribwork is 20 feet wide and 16 feet high, at the outer end. The work is completed with the exception of about 6 feet in height of the outer block and the putting in position of the top of the outer 35 feet in length of the work. When completed

the outer end of the wharf will stand on the edge of the channel and will be approach both by land and water. Spring tides rise here 10 feet and neaps 7

WHITE HAVEN.

White Haven, Guysboro' county, one of the finest harbours in Nova Scoti the south or Atlantic coast, fourteen miles to the westward of Cape Canso.

In 1854, the residents, with some aid from the provincial government, un the construction of a canal for boats through a low and narrow isthmus betwee shall Cove, three miles within the entrance, and Witch Cove, at the eastern ext of Tor bay. On the completion of improvements made in 1876, it was 620 f length and from 10 to 12 feet in width; the bottom was about one foot above e low water, or 4 feet 6 inches below the level of extreme high water. Prior to 1 walls had become dilapidated, the southern entrance was blocked with sand, channel inside filled with sediment and washing from the slope.

In 1894-95 repairs and improvements were made by the department with th of obtaining ultimately a uniform depth at extreme low water of one foot and between retaining walls of 12 feet. The repairs and improvements effected i the removal of 160 feet of old retaining wall on each side at the south end, construction of walls 10 feet wide on top, of which 20 feet at the outer end side are of cribwork, and the remaining 140 feet of brush and stonework; ten repairs to the retaining walls on both sides from 160 to 270 feet from the sou and on the east side from 328 feet to 480 feet from the south end; the construc new walls on each side from 480 to 500 feet from the south end as foundati bridge abutments, built by the municipality; the reconstruction of 100 feet of the west side 500 to 600 feet from the south end ; the construction of 141 temporary wall on each side (600 to 741 feet from the south end), and deepenin end to end to within 3 to 6 inches of extreme low water.

In 1900-01 and 1901-02 the sum of $2,686.53 was expended in continuing the and improvements undertaken in 1894-5. The work performed comprised t struction of 137 feet of brush and stone retaining wall on each side, 160 to 2 from the south end, the removal of the old retaining wall on the west side, 528 feet from the south end; and on the east side 588 to 740 feet from the south en construction of a new retaining wall 583 feet in length on each side 167 to 7 from the south end and deepening between the retaining walls to about 1 foot water.

In 1902-03 the sum of $799.25 was expended in constructing 80 feet of br stonework on each side 750 to 830 feet from the south end, thus completi work undertaken, with the exception of a cribwork retaining wall 20 feet in len each side at the north end.

During the fiscal year ended June 30, 1904, the sum of $500.75 was expen nearly completing the cribwork retaining walls at the north end.

The total expenditure to June 30, 1904, including a refund of $876.42 to t vincial government was, $6,317.98.

WHITE'S COVE.

White's Cove, Digby county, is a settlement of some 200 or 300 people, enga fishing and farming, situated on the shore of St. Mary's bay, about five miles s Weymouth. In 1903-04 the department expended $1,839.66 in extending and ing an ancient wharf of cribwork. The new block is 38 feet square, and from 1 feet high, substantially built of round-log cribwork. The next 100 feet in length wards was also taken down and rebuilt and the whole wharf, 260 feet long, was up with gravel.

WINDSOR.

Windsor, the county town of Hants, with a population of about 4,500, is an important town situated at the head of the estuary of the River Avon, on the Dominion Atlantic Railway, 46 miles north-west of Halifax. The shipping registered at the port for the year ending 1896, amounted to 131,000 tons. In the neighbourhood are extensive quarries of gypsum, of which about 120,000 tons are annually shipped to the United States. Some two or three million feet B.M. of lumber, are annually exported by water. Up to a dozen years ago the wharfs of the town were comparatively free from mud, and at high water large vessels could lie alongside and discharge or load. In the last few years, owing partly, no doubt to the construction of the new highway bridge, the mud has accumulated in front of the wharfs to such an extent that it is only on an extreme high tide that moderate sized vessels can approach or leave the wharfs.

With the object of scouring away the accumulated mud, the department in 1897-98 began the construction of a training weir, extending down stream from the corner of the Falmouth abutment of the road bridge at an angle of 45 degrees with the bridge. The weir is constructed of brush mattrasses at the bottom, with sufficient stone to keep them in place, and with cribwork on top of them. The thickness of the brush mattrasses, with their load of stone, is from 2 to 4 feet, the average depth of the main or under crib is from 5 to 8 feet, and the uniform height of the 'A'-shaped top crib is 7 feet; the sloping sides of the work are sheeted with 3-inch hardwood plank, and the crest is covered with 6 x 6 x ½-inch steel angle securely bolted. The work is built on shifting quicksands, and owing to the great rise and fall of the tides (about 40 feet) and the great velocity of the current at ebb and flood tide, it was constructed under great and peculiar difficulties.

In the fiscal year ending June 30, 1901, the sum of $2,173.74 was expended in completing the work to its originally designed length of 600 feet.

In the fiscal year ending June 30, 1902, the department expended the sum of $2,725.93 in extending the work a further distance of 100 feet and making repairs.

In 1903-04 the sum of $97.71 was expended in replacing and building a small quantity of the hardwood sheathing on the outer end of the training weir that was torn off by ice in the previous winter.

Spring tides rise about 40 feet, neaps 36 feet.

WOLFVILLE.

Wolfville, King's county, is a town of about 2,000 people, situated on the right bank and near the mouth of the Cornwallis river, which issues into the Basin of Minas at its south-west corner. It is an important station on the Dominion Atlantic Railway, half way between Annapolis and Halifax, 64 miles from Halifax, 66 from Annapolis, and 7 miles east of Kentville, the county town of King's.

In 1900-01 (contract dated May 12, 1900, work finished in November, 1900), the department, at a cost of $6,360.50, built a public wharf on the right bank of the river, near its mouth, at a distance of about half a mile from the town. The approach consists of earthwork—an embankment 144 feet in length, 26 feet wide and of an average height of 5 feet. The wharf itself, which is substantially built of pilework, is 152 feet long, 36 feet wide, including an inclined slope on the south side 10 feet wide. It has an L on the outer end 82 feet long, giving a total face length on the river channel of 116 feet; the L is 40 feet wide, and from 48 to 49½ feet in height along the outer face, giving a depth of water at high water ordinary spring tides of about 47 feet. At low ordinary spring tides the river channel carries a depth of 4 to 6 feet of mostly fresh water.

In 1902-03, the channel of the river moved shorewards, owing to erosion, tance of some 20 or 30 feet, causing the two outer rows of piles of the wharf more than half their hold in the mud and sand. In consequence of this it b necessary to build cribwork in the spaces between the two outer rows of piles end of the L, and also on the opposite end of the wharf alongside the incline This mode of treatment being insufficient, and the scour continuing, it was deci remove the outer 20 feet in width for the whole 118 feet in length of the wha rebuild it on the inner side of the L. The work was begun on October 1, 190 vigorously carried on until December 24, when, owing to the severity of the w and the rapidly accumulating ice, operations were suspended.

The winter of 1903-04, was the severest known for a great many years. Ice ed in and around the piles of the wharf to a greater weight and thickness tha been known since the wharf was built. The floating power of the ice added reduced hold of the piles in the bottom from the erosion of the channel, cause whole L to be lifted up by the exceptionally high tide of March 3, 1904, to a hei from 5 to 8 feet. . A few days later, the whole outer portion of the wharf, inc the L, was carried away and destroyed.

In 1903-04, the sum of $1,768.89 was expended in the above alterations ar provements and after the destruction of the wharf, in saving such of the tim was possible.

Spring tides rise 48 feet, neaps 40 feet.

YARMOUTH BAR.

Yarmouth, the county town of Yarmouth county, is situated at the south-w extremity of Nova Scotia. It is a thriving and prosperous town of nearly 7,0 habitants, and, next to Halifax, the largest and most important in Nova Scoti is the terminus of the Dominion Atlantic Railway, whose fine Clyde-built ste make regular trips throughout the year to Boston. There are several important factories in the place, but the leading business is shipping, of which a larger to is owned here than in almost any locality in Canada.

At low water, Yarmouth harbour, in which spring tides rise 16, neaps 1 consists largely of mud flats covered with eel grass. The harbour is formed by cession of shingle or gravel beaches (called Stanwood beaches), aggregating abo mile in length, which connect the northern end of Cape Fourchu island, also a mile long, with the southern end of Stoney Point, on the mainland, and separat harbour from the Bay of Fundy.

In 1867, it was found that part of the beach between Cape Fourchu and S Point was gradually wearing down, and unless this action was arrested the sea eventually sweep away the beach and destroy the harbour. The government of Scotia began the work of protecting the beach in 1867, constructing 200 feet of work at Stoney Point. Between 1873 and 1875, the Public Works Departmen structed the remaining 2,800 feet of protection work required to reach Cape Fo and added buttresses or groynes to stop the movement of the gravel.

Between 1875 and 1878, the protection works, though substantially built of filled cribwork and close piles on their seaward faces, had to be repaired and str ened, the expense amounting to over $25,000.

Between 1888 and 1896 no further works of repairs were undertaken on the protection, and it become dilapidated and decayed. Breaches were made throug the sea in various places. During the year 1896-97, the sum of $2,983.62 was ex ed in carrying on the most urgent works of repair, and in 1897-98, a further s $3,234.51 was expended in continuing and completing these repairs. This las was applied in rebuilding a length of 50 feet at the eastern end of the protection and in constructing a groyne, projecting at right angles from the same end, for

tance of 175 feet. The groyne is 25 feet wide and 11 feet high, substantially built of round-log, stone-filled cribwork. Its object was to protect the beach at the north-eastern end of the main cribwork protection, by accumulating the gravel and breaking the waves before they expended their force on the beach. It has admirably fulfilled its purpose, as gravel has accumulated at the junction of the groyne with the main work to a depth of over 14 feet.

In 1898-99, the sum of $300 was expended in repairing a small but serious breach 25 feet long, in the bottom of the outer face of the beach protection work, and in covering with 3-inch hemlock plank a length of 430 feet of the top of the work, in order to prevent the ballast from being washed out by the waves.

In 1899-1900, the sum of $970.27 was expended in repairing two or three small but dangerous breaches in the seaward face of the work, and in covering the top for a length of about 670 feet with 3-inch plank to prevent the sea from washing out the ballast.

In 1900-01, the sum of $3,389.70 was expended in extensions and repairs, the individual expenditures on the work done being as follows:—

(a.) $142.43 was expended in repairing and filling with ballast a length of 60 feet of the older portion of the work.

(b.) $2,798.50 in extending the work 514 feet westerly; this new length was 8 feet wide, from 5 to 8 feet high, substantially built of round-log cribwork, sheathed on the seaward side, and covered on top with round spars well spiked on.

(c.) $448.77 in rebuilding a length of 50 feet of the older portion of the work, near the eastern end, which was severely damaged by a heavy sea, November 9 and 10, 1900.

In 1902-03 the sum of $120.94 was expended in a few petty and miscellaneous repairs to the beach protection work, the work done comprising the replacing of a few pieces of close-sheathing washed off by winter seas, the renewal of some flooring, and the respiking of loose portions.

In 1903-04 the sum of $325.57 was expended in building a fence on both sides of the beach protection, 1,250 feet long, for the purpose of making it safe for horse traffic. A few minor repairs to the beach protection work were also made.

Spring tides rise 15 feet, neaps 12 feet.

PRINCE EDWARD ISLAND.

AITKEN'S SHORE PIER.

Aitken's Shore pier, King's county, is on the south side of the Montague river, opposite Georgetown. The pier was in former years quite an important place of shipment, and also used as landing for the ferry steamer plying between Georgetown and Lower Montague, since, however, the construction (about twenty years ago) of the new ferry landing half a mile east and lower down the river, and a private wharf a short distance west of it, the pier was not kept in repair and latterly had become a complete wreck, and useless for shipments. The great need of proper shipping and landing facilities in the locality having been represented to the Dominion government by the residents of the surrounding districts, the old pier was taken over from the local government and parliament made an appropriation of $3,200 at the session of 1902 for the works of reconstruction required to place the pier in serviceable condition. Materials were got out during the winter of 1902-03 and construction began early in May. By June 30, 1903, the end of the fiscal year, a length of 167 feet of the shore end of the pier, 22½ feet wide, had been rebuilt the full height, an adjoining length of 80 feet, also 22½ feet wide, to within 1 foot of the top.

The expenditure during the fiscal year 1902-03 was $2,163.99, which included cost of much materials ready for use in the work.

During the fiscal year 1903-04, the old pier was completely restored over its wh length of 356 feet, and an extension 35 feet long, 30 feet wide was built in order bring the outer end of the pier in a depth of 10 feet at low water, and 15 feet at h water spring tides.

At the bottom, the structure is formed of poles close laid lengthwise and cr wise, which are ballasted at intervals through pockets formed for the purpose. top portion, from 3 to 4 feet in height, consists of walls of square timber secured longitudinals and cross ties, the space thus inclosed being filled with ballast, on of which a roadway is formed of broken stone and gravel ; the sides and ends of pier are fender-piled at 5 feet centres.

The pier has now a total length of 391 feet and is 20 feet wide for a length of feet at the inner end ; the remaining length of 141 feet is 30 feet wide.

The amount expended during the fiscal year 1903-04 was $2,174.80, and the t cost of the work was $4,338.79.

BAY VIEW.

Bay View Pier, Queen's county, is situated on the eastern side of, and near mouth of the Hope river that enters New London harbour about 3½ miles south- of the harbour entrance. The pier has a total length of 509 feet and 18 to 20 wide on a length of 409 feet outwards from the shore, thence increasing gradually a width of 35 feet at the outer end, where a depth of 10 feet is formed at low w or 14½ feet at high water spring tides. The pier is not exposed to any heavy sea, being too low the top clay and gravel road is exposed to being damaged by extr high tides and storms.

During the fiscal year 1903-04, the sum of $47.61 was expended in repairs to roadway.

BEACH POINT.

Beach Point, King's county, is on the south side of the entrance into Mu harbour. From the 'Point' a sand spit extends in a westerly direction along edge of the channel, for a distance of about a mile, and incloses between it and shore a basin having a depth of from 3 to 5 feet at low water, which affords g shelter and anchorage for fishing boats. The sand spit or bar is dry at low water has a width of about 500 feet. During the last fiscal year 1903-04, a cut was m through the bar by the use of 'mud diggers' worked from the ice ; the channe dredged is 575 feet in length, 10 feet in width, with an average depth of 5 feet ; has proved to be most satisfactory, and of great benefit to the fishermen of the local The cost of the work was $334.49.

CASCUMPEC HARBOUR AND BAY.

Cascumpec Harbour and Bay, Prince county, is on the northern coast of island, its entrance is about 18 miles south of Cape North, and 20 miles southwest from the entrance of Richmond bay. The harbour and bay are connected by wha known as 'Cascumpec Narrows,' a shallow stretch of water from a half to a mile width, lying between the sand dunes and sand bars that extend about parallel w the shore of the island between the two harbours or bays.

Cascumpec Harbour or Bay is of considerable extent, being from 3 to 4 mile length and from a mile to 3 miles in width, with a good depth of water; its entra is perfectly safe-sheltered in all winds. The bay is much used as a harbour of ref by coasters and fishermen ; at its head is situated the town of Alberton, the sec in importance in the county, and one of the principal stations on the line of

Prince Edward Island Railway, which has a branch to a deep water wharf, with all necessary sidings, warehouses, &c., at the harbour front from where an extensive business is carried on during the season of shipment. This harbour, however, like all the others on the northern coast of the island, is obstructed by an outlying shifting sand bar situated about a mile off its entrance, between the beaches, and on which the usual greatest depth is about 10 feet at low water spring tides. This is at times somewhat reduced on account, it is said, of breaches occurring in the sand beaches; these openings known as 'New Harbour' and 'Goose Harbour' are situated about two and three miles east of the entrance of the harbour. Some three or four years ago, a further break occurred in the beach about a mile east of the entrance; in order to prevent further damage, this break was closed during the winter and spring of 1903, by building a dam composed of brush and stone in the bottom, with a cribwork top fully ballasted and fender-piled at 10 feet centres, on a length of 350 feet and 12 feet wide at top. Shortly after the completion of the work above described, a further break of considerable extent occurred at its northern end, it is doubtful that any good results can be obtained unless very extensive works are built.

During the spring of 1904, an additional length of 85 feet of dam was built at the north end of the work previously constructed and of the same design, at a cost of $1,072.75.

CHINA POINT.

China Point pier, Queen's county, is situated on the west side of the Orwell river, near its entrance into Orwell bay. A pier was originally built at this place by the local government, and came under the control of the Dominion government in 1884. It has a total length of 426 feet and consists of a shore abutment or approach, 140 feet long, six blocks with intervening spans, and a pier head fronting 72 feet on the channel, and having a width of 37 feet, with a depth of 15 feet at low water or 23 feet at high water spring tides. Being a very old structure, when assumed by the Dominion government, the pier head has since been rebuilt, and from time to time repairs to the inner portion were effected to keep it in passable condition.

During the last fiscal year, 1903-04, the sum of $125.56 was expended in general repairs to the roadway; the work consisted in renewing eight span beams, replacing part of the planking on the pier-head and spans, and repairing the broken stone and gravel roadway on the shore abutment.

COVE HEAD.

Cove Head, Queen's county, is on the north side of the island, about midway between Tracadie and Rustico harbours. Within its entrance, which at low water is about 250 feet wide, the harbour or bay has a length of about 4 miles, and a width of from half a mile to a mile; it receives the waters of Black river, and Auld's, Mill and McCallum's creeks. It is navigable over the greater portion of its extent for small vessels and boats. The depth of water on the outer bar, however, is only from 3½ to 4 feet at low water or of from 7½ to 8 feet at high water spring tides. The harbour proper commences immediately inward of the entrance and extends westward between the sand beach, and what was an extensive sand flat dry at half tide. Formerly the main channel into the bay was on the western side of the sand flat; it had a width of 300 to 400 feet, with a depth of 5 feet and over at low tide, the small channel that existed on the east side of the flat was shoal and narrow. During late years two other channels have opened up through the flat, resulting in the main channel becoming nearly closed. In order to improve this condition, a contract was entered into on March 12, 1903, for the construction of a 'shear dam,' 1,575 feet long, extending in a north-westerly direction from the south-eastern side of the bay, and completely closing

two of the channels. Work was commenced early in May, 1903, and by the end o of that year the dam had been partly completed on a length of 980 feet, and th of $1,289.40 had been paid to the contractor.

During the fiscal year 1903-04, the work was continued and completed on N ber 23, at a total cost of $5,917.40. The work consists of a round-log oper work resting on a bottom formed of brush; the cribwork is 12 feet wide, excepti outer 20 feet of its length, which has a width of 22 feet; its interior is filled wit ballast and close-laid brush placed in alternate layers; the sides of the dam are f piled at 10 feet centres, while the end and a length of 20 feet on each adjoining s close-piled, the top is covered with close-laid trimmed poles.

GRAHAM'S POND.

Graham's Pond, King's county, is situated on the east coast of the island a miles south of the entrance to Cardigan bay, and about the same distance north entrance to Murray harbour.

The pond has a length of about half a mile, and a width of from 600 to 80 carrying in the body of the pond and at a short distance from the entrance, a of 6 to 8 feet at ordinary pond level, which is usually from 1½ to 2 feet highe ordinary low water, and 3 to 3½ feet below high water spring tides, which rise a feet.

During 1900, the Department of Marine and Fisheries cut a new channe the pond in order to make it possible for boats to enter at all times of tides, b new cut gradually filled in again nearly to its original state. In the fall of 1901, instructions of the department, the cut made by the Marine and Fisheries Depa was cleared out, and a protection of brush and stone was built, which proved ef in keeping the channel in the desired course as well as giving some shelter for In 1902-03, the protection works were further extended at a cost of $500.

During the fiscal year 1903-04, the sum of $499.84 was applied on a furth tension of the works on either sides of the 30-foot channel to a length of 280 fe

GRAND RIVER.

Grand or Ellis River, Prince county, empties into Richmond bay, about miles north-east of Wellington, a station on the Prince Edward Island Railway

During the years 1880-81-82, the Prince Edward Island government built a on the north side of the Grand river, near its mouth, at a cost of $4,618.60. The is 654 feet long, 22 feet wide and consists of a shore abutment 530 feet long, two respectively 31 and 44 feet long and intervening spans of 25 feet each.

The structure was built of close-faced square timber cribwork filled with ston brush, the top of the outer block was planked, but the abutment was top finished clay and gravel.

Owing to the unwillingness of the local government to keep it in repai wharf became dilapidated and unfit to be used for shipping purposes, until the part of the year 1902, when it was transferred to the Dominion government.

During its session of 1903, parliament granted the sum of $1,500 for the struction of the wharf. Work was commenced early in the spring of 1904, and end of the fiscal year, the top of the shore abutment, 530 feet in length, had be built, 132 fender piles driven on both sides and a stone and earth approach 1 long had been built. The expenditure during the fiscal year 1903-04 was $1,337.

LEWIS POINT.

Lewis Point pier, King's county, is situated on the north side of Cardigan short distance below Cardigan Bridge (the head of navigation), and about

miles from the entrance of the river into Cardigan Bay. The pier is 575 feet long, nd is composed of a shore abutment 365 feet in length, two intermediate blocks each 5 feet long, and an outer block 79 feet in length, with intervening spans each about 0 feet wide, the outer block is 33 feet wide. At the outer end and sides of the outer lock there is a depth of 12 feet at low water or 17 feet at high water spring tides.

During the fiscal year 1903-04, the top portion of the shore abutment has been enewed on its total length of 365 feet and fender piles were driven 10 feet apart on oth sides, general repairs were done on the outer part of the pier. The expenditure or the fiscal year was $1,088.93.

MIMINIGASH.

Miminigash Harbour, Prince county, is situated on the north-west coast of the sland, about fifteen miles from North Cape, and eighteen miles from West Point. Be- ore its improvement by the department it was one of the numerous ponds along the oast that empty into the Gulf of St. Lawrence by numerous channels through sandy eaches. These channels constantly change their position, and during severe storms ften become blocked up, the entrance to Miminigash Pond, however, being well shel- ered by 'Miminigash Reef,' a ledge of rock nearly a mile long, that lies parallel with he shore at about half a mile distant, it has the advantage over the other ponds on he coast, and is the one generally used by the fishermen during stormy weather for helter. After an examination of different sites proposed, it was selected by the de- artment for the formation of a harbour on that portion of the coast. With this bject in view work was commenced in 1878, and now consists of breakwaters or piers n each side of the entrance, placed 56 feet apart, confining the channel in a per- anent position. The breakwater on the north side is 550 feet long, and that on the outh side 350 feet, inward of both of them there are beach protection works, to guard gainst new channels forming back of the breakwaters, these protection works are of ribwork solidly filled in with brush, poles and stone. The works are of close-faced quare timber, fully ballasted, and planked over, the outer faces are close-piled.

During the fiscal year 1903-04, some excavation was done in the channel to remove and and gravel which had been carried over the northern breakwater during a fall orm; the work extended over a length of 167 feet, 12 feet wide and average depth of feet, the expenditure was $350.

NEW LONDON HARBOUR.

New London Harbour, Queen's county, is on the northern coast of the island, bout 10 miles east from the entrance into Richmond bay. The entrance of the arbour has a width of about 1,200 feet, it is about 3 miles long and nearly as wide; receives the waters of the Hope, and South-west, the Stanley and the French vers, all of which are navigable for short distances and have wharf accommodation rom which an export is made of large quantities of farm produce; the districts rrounding the harbour are well cultivated and very productive. The harbour is rgely used, as a fishing station and harbour of refuge, for which it is most conven- ntly situated, the fishing grounds in the vicinity are considered the best in the Gulf f St. Lawrence. For the improvement of the entrance, which is obstructed by a ifting sandbar, works were begun by the department in 1878, these now consist of reakwaters or beach protection works on each side; that on the eastern side has length of 1,120 feet, while the western one is 460 feet long; the object of their onstruction being to extend and preserve the sand beaches, and to so confine the urrent as to cause increased scour across the sandbar. The result obtained has een most satisfactory, the depth of water in the harbour is 6 feet at low water, and 2 feet over the bar, making this one of the best on the north coast of the island.

Since construction the western block has received no damage, the eastern one, being exposed to a very strong tide, the action of running ice, and at times, heavy sea, requires, about yearly, some expenditure for its maintenance. the fiscal year 1902-03, the sum of $745.93 was expended in rebuilding a len feet, and in repairs to a further length of 200 feet. During the fiscal year the sum of $477.15, was expended in depositing additional ballast in differ of the work where settlement had occurred, repairing the sheathing on block, and rebuilding about 4 feet in height two parts, respectively, 130 and long.

On May 3, 1904, a contract was entered into for the construction of or shear dam on the western side of the entrance about 1,000 feet inwards, westerly from the western breakwater, the purpose of the new work being to the depth of water over the shoal at the junction of the French and South-we The work will have a length of 550 feet, extending to near the inner edg shoal ; for a length of 300 feet at the inner end, it will be constructed of open cribwork 12 feet in width, solidly filled with ballast, and fender-pile sides every 10 feet; for a further length of 200 feet the width of the work feet and will be constructed of brush, piles, and stone ; the outer 50 feet similar construction, but 23 feet in width. The work was commenced on 1904, and by the end of the fiscal year, the cribwork portion, or inner 300 about completed, requiring only some little ballasting and the driving of a fe piles.

NORTH CARDIGAN.

North Cardigan pier, King's county, is situated on the north side of th gan river about five miles from Cardigan bridge, and is one of the Prince Island piers, control of which was assumed by the Dominion government The pier has a length of 381 feet, consisting of a shore abutment or appr feet long and seven blocks with intervening spans, and from 23 to 25 feet wi the outer block or pier head, which has a width of 32 feet ; the blocks are to 25 feet long, and the spans from 14 to 26 feet. The approach and all t are constructed of close-faced timber work, filled with brush, stone and gr latter forming the roadway, excepting on the two outer blocks which are flo ered and planked over. Being a very old work, and much out of repair when by the Dominion government, it has since required extensive repairs from time to keep it in passable condition for traffic, the greater portion of it nearly all rebuilt.

During the fiscal year 1903-04, the construction of an extension to th was commenced and nearly completed, the new work is 75 feet long, 32 feet the outer end stands in 14 feet at low water spring tides which rise 5 feet, i of close-faced round logs, up to low water level, above which the work is built faced square timber, filled with stone ballast and the top finished with brok and gravel ; it is intended to fender pile the sides and end at above 5 feet and put each alternate pile of creosoted timber. The expenditure on the e up to June 30, 1904, has been $2,699.88.

ST. PETER'S BAY.

St. Peter's Bay breakwater, King's county, is on the north coast of th about thirty-five miles west from East Point, and on the west side of the into St. Peter's Bay, the work was constructed by parliament in 1878 to the entrance, and afford a better shelter for the fishermen. Originally it had of 226 feet, built of close-face solid timber work, fully ballasted, floor string planked over ; to this has since been added beach protection works that ext

inner end of the breakwater connecting with the sand hills or high ground so as revent a channel being cut through the intervening low beach; this breast work or h protection has a length of 1,420 feet, a width of 9 feet and averages 5 feet in ht. The outer end of the breakwater having been damaged by the running action of the teredo, and through natural decay, a contract was entered into September 26, 1902, for the construction of an extension 30 feet in length, that d give some further shelter and thoroughly secure the work. Materials were out for this work during the winter or 1902-03, and construction was commenced he latter part of May. The work was satisfactorily completed on September 17, at a cost of $1,557.50, of which $147.50 was for inspection.

SOURIS HARBOUR.

Souris harbour, King's county, is situated on the southern side of the island, about en miles west from East Point, and is most important as a harbour of refuge, and maintained by the Dominion government; the work which was commenced in 1875, e of shipment, for both of which it has been made available by a breakwater built now a length of 1,250 feet, and being of different forms, widths, and construction, description of which it may be divided into three sections or portions, viz., inner on, 290 feet long, and 30 feet wide, built of close-faced timber, plumb-faced on sides, and having on the seaward side, a protecting stone slope ; the work stands average depth of 7 feet of water at low tides ; middle section, 530 feet long, aver- g 65 feet wide, also of close-faced square timber, but on the seaward side having upper 10 feet sloping 1 to 1, this section stands in an average depth of 17 feet at water, and, during the past three seasons, has been having a stone protection slope ed on its seaward side ; on the outer or third section, 390 feet long, 24 feet wide, has on the seaward side a protection of stone, extending to within 3 feet of the and sloping 3 to 1, its end terminates with a block 40 x 80 feet, constructed of -faced creosoted timber, standing in a depth of 22 feet of water at low spring .

During the fiscal year 1903-04, 2,240 cubic yards of stone have been deposited on eaward side of the middle section, in continuation of the work commenced during two previous years, towards the formation of the stone protection slope. The of this work including superintendence was $8,572.60, and the sum of $895.49 was nded in ballasting different parts of the body of the work where settlement and out has occurred, 831 tons of durable imported stone being employed for the ose.

Slight repairs were also effected on the outer section.

The total expenditure for the year 1903-04 was $9,498.09.

STURGEON.

Sturgeon pier, King's county, is situated on the southern side of Cardigan Bay, t six miles south of Georgetown, the terminus of the Georgetown branch of the ce Edward Island Railway.

The pier, constructed many years before confederation, by the local government, ne of the Prince Edward Island piers, assumed by the Dominion government in , it is 434 feet long and from 20 to 25 feet wide. Originally the outer 184 feet formed of blocks and spans, but the latter have since been filled in ; with the ex- ion of the outer 40 feet of the length, the top is finished with broken stone and el filling, which require some repair nearly every year, owing to the work being and storm tides often pass completely over it.

During the fiscal year 1903-04 the sum of $59.62 was expended in making up wash- and settlement that had occurred, and in replacing some broken and defective ks on the pier head.

TIGNISH.

Tignish Harbour, Prince county, is on the north or Gulf coast of the isla six miles southward from North Cape. The harbour is at the mouth of th river that enters the Gulf of St. Lawrence at this place. On each side of mouth, the coast line being quite straight for a long distance, gales from east to south-west throw in a very heavy sea, and this acting on the sand the beaches are mostly composed often caused the entrance to become c blocked up, until broken through by a freshet or an unusually high tide. I keep the entrance open, and preserve the channel in one position the gove Prince Edward Island, in 1868, began the construction of works on each si river mouth, contracting it to a width of 40 feet, thus increasing the scou of the current in entrance channel. After the transfer of these works to th ion government they were raised, repaired, and extended ; breast-works protections were built on either side of the piers or breakwaters so as to con with the high ground, and prevent all possibility of a channel, forming at th

During the fiscal year 1903-04, the sum of $699.93 was expended in the levelling of the outer block of the northern breakwater that had settled ou age depth of 8 feet.

VERNON RIVER.

Vernon River pier, Queen's county, is situated at the head of navigat Vernon river and about 2 miles above its entrance into Orwell bay, it is bu lower side of the public road bridge with which it is connected by an ap feet in length and 30 feet in width. The pier is one of the Prince Edwa piers which were transferred to the Dominion government in 1884, it is a c block 120 feet in length by 30 feet in width placed parallel with the channel face is in a depth of 10 feet at low water or 18 feet at high water spring t channel or approach from the main channel of the river to the pier, is abo long and was made by dredging. As the pier, &c., was a very old structure out of repair when taken over by the Dominion government, some expenditur required almost yearly to keep it in passable state for traffic.

During the fiscal year 1903-04, the sum of $299.26 was expended in r the inner 80 feet of its length, and the adjoining approach from the bridg 38 fender piles, ten of which were of creosoted timber, putting on new guar a new mooring post, and new floor stringers.

VICTORIA.

Victoria, or Crapaud pier, Queen's county, is situated at the head of n of the Crapaud Basin, at Victoria village which is the most important plac ment after Summerside, on the south-western coast of the island ; it is a way between Charlottetown and Summerside harbours, and about 11 mil (south) from Emerald Junction on the Prince Edward Island Railway, it i let of probably the best tilled and most productive districts in the island ; as well plies weekly between Victoria village and Charlottetown. Since c tion the department has expended considerable sums in dredging to improv proach from deep water in the 'Basin' to the pier, and in repairs and r tion which were urgent owing to the dilapidatel condition of the work wh transferred to the Dominion government. The pier has a total length o and consists of a shore abutment 286 feet long, and 20 feet wide, a midd 143 feet long and 37 feet wide, and the pier head 57 feet long and 58 feet the outer face in a depth of 9 feet at low water, which depth was obtained ing. Spring tides rise 8 feet.

During the fiscal year 1903-04, the sum of $84.69 has been expended in putting mooring posts, in general repairs to the planking of the roadway, and other ng repairs.

WEST POINT.

West Point wharf, Prince county, is situate on the north side of Egmont bay, he eastern shore of Northumberland Strait, about 14 miles from O'Leary station he Prince Edward Island Railway, and about 35 miles by water from Summer- harbour.

The wharf is one of the Prince Edward Island piers, control of which was as- ed by the Dominion government in 1884. It had been built many years before ederation by the provincial government, to give some shipping facilities to the ict, there being no wharf or shipping place at the time, where vessels of any could call at between Summerside and North Cape, a distance of about 60 miles. t Point being midway between these points, was considered a favourable site for arf and the work is said to have proved of much benefit up to 1884, when it was y damaged on the breaking up of the ice, and remained in bad condition until when it was thoroughly repaired by the department. The wharf had a length 20 feet, a width of 30 feet, and extended out to a depth of about 7 feet at low r or of 11 feet at high water spring tides. For the purpose of obtaining a better h of water, a contract was entered into in 1900, for the construction of an exten- 100 feet in length, 30 feet in width, reaching a depth of 9 feet at low water, the was completed in 1901. Since its completion, however, a sandbar has formed ort distance out from the end of the wharf where only 7 feet is found at low r.

During the fiscal year 1903-04, the sum of $1,438.81 was expended in levelling new part of the work which had settled considerably, and protecting a portion of sides by close piles.

PROVINCE OF NEW BRUNSWICK.

ANDERSON'S HOLLOW.

Anderson's Hollow, Albert county, is a cove of Salisbury bay, on the north-west of Chignecto channel in the Bay of Fundy. Spring tides rise 40½ feet; neaps feet.

The breakwater wharf at this place was begun in 1879 by the construction of a ched block 550 feet from the shore, with which it was afterwards connected. In ust, 1885, the work was 290 feet in length, and three years later was carried to shore. The structure, 25 feet wide on top, was originally 27 feet high at the outer but the bottom having been raised by the accumulation of the littoral drift, height is now 3 or 4 feet less. It is built of round timber cribwork, lightly bat- d on the inside, but sloped at the rate of ½ to 1 and sheathed on the weather

The breakwater was damaged by storm on November 21, 1895, when a small thouse placed at the outer end was swept away, together with part of the break; e some of the top work at the head was simultaneously shaken and started.

In 1895-6, a small sum was applied to bolting loosened timber for temporary rity.

During the fiscal year 1896-97, the inside face of the wharf at the outer end, ch had received a heavy list in the storm of the previous year, was taken down

and rebuilt for a distance of 75 feet on top and 44 feet on the bottom. Th taken out, the new face being carried to a height of 15 feet, in order to lev and new covering was laid for a length of 75 feet. Seventy feet out of 110 f mantled break were reconstructed, and fenders were placed on the inside face.

In 1898-99, by an expenditure of $121.31, twenty-seven pieces of new were laid and bolted to the sloping-face ; a new cap and face-timber wer and the gap in the break, 40 feet long, left unfinished at the time of th repairs, was built up with 4 tiers of timber strengthened with knees.

In 1900-01 the break-timbers, which had been started up from 3 to 9 storms for a distance of 290 feet, were restored to position. For 25 feet a end, the break was raised one tier ; 8 bridles, 9 inches square, were place the knees of the break for a distance of 100 lineal feet ; 3 new pieces sheathing were placed on the sloping face, and loose planks were secured Through the shoal obstructing the work on the inside, a channel 300 fee feet wide and 5 feet deep was made by means of a wheel scraper. It however, that the shoal formed again rapidly with the recurrence of any swell. A groyne, 50 feet in length, made of piling and 9-inch timber, wa the outside of the work, in order to check for a time the accumulation of lit on the inside.

During the year 1901-02, new sheathing, 6 inches thick and from 22 long, was laid and secured with ¾-inch bolts at different places along th face of the outermost 190 feet. Additional bolts were also driven to secu and loosened sheathing ; while 71 pieces of new covering, 6 inches thick, w on top of the work.

During the year 1902-03, the weather-face of the outer block, 100 feet l become decayed was cut down nearly to the bottom and rebuilt for a width with heavy timbers secured in great measure with screw bolts, the out sheathed with 9-inch spruce. More than half the covering of this block wa On it a new break was built three tiers in height for 26 feet, 61 feet, and one tier for 13 feet in length. The covering was patched parts of the work. Four new fenders were placed and the cap was rene length of 47 feet. An extension of 50 feet, for which foundations were through the shoals to the rock, was begun and brought up to a height of

During the fiscal year of 1903-04, the break on the outer block was com the sheathing was fully bolted. An extension, 50 feet long, and 27 feet wi was begun and brought up to within two tiers of the finished top. The shea ders and covering yet require to be applied to complete this extension. was excavated sufficiently to make beds for the shipping.

Like many other works in the Bay of Funday, Anderson's Hollow crosse tion of the flood stream and of the prevailing winds. In consequence, an tion of littoral drift is found on the south-west side, which travels round th is deposited under the lee of the breakwater, forming a shoal which is an vessels.

The total expenditure to the 30th of June, 1903, amounted to $20,569.2 The expenditure during the fiscal year 1903-04 was $1,797.22.

BELLIVEAU.

Belliveau, Westmoreland county, is a farming settlement on the east the Petitcodiac river, 14 miles below Moncton, and nearly opposite Hillsb Albert county.

The department constructed a wharf here, in 1888, of round timber cri feet long, 24 feet wide on top and 23 feet high at the outer end, to replace

oyed in 1869, and to afford facilities for shipping lumber and produce and for land-g supplies.

Since its construction, no expenditure has been made on the work, and lately the has been so much out of repair as to render the wharf unfit for use. Spring tides e 45 feet, neap tides 38 feet.

During the fiscal year 1903-04, repairs were commenced and carried out to the ex-nt of removing the old cap pieces covering, and upper face timbers, renewing six cks of the second tier of face-timbers, 18 cross-ties and the four mooring posts. A w tier of upper face-timbers was laid and above it two tiers, close laid, of 10 x 10 uare timber around the sides and outer end. The interior for a length of 135 feet om the outer end, was filled with 3½ feet in thickness of brush, which, for a length 19 feet, was covered with about nine inches of stone. A total of 120 cubic yards stone was procured towards completing the repairs.

Expenditure for the year was $750.

The total expenditure to date is $3,350.27.

BLACK BROOK.

Black Brook (or Loggieville), Northumberland county, is situated on the southern le of Miramichi river, six miles below Chatham. It is the terminus of the Canada stern Railway, and a port of call for the steamer of the Miramichi Steam Naviga-n Company.

During 1901, the department constructed a wharf at Black Brook, immediately low the Bentley wharf, so-called. It consists of an approach or stone embankment 2 feet long and 20 feet wide on top, with slopes of 1 to 1 on the sides, a span of 15 et and a pier-head, 25 x 40 feet, of close-faced timber-work, forming a total length 212 feet, with the outer end in a depth of 10 feet at low water. The top of the ap-oach was finished with cross-ties placed 8 feet apart, filled between with earth and avel, and at the end of the ties, cap timbers were placed on each side of the work. he wharf was completed in October, 1901.

During a high tide, accompanied by a heavy storm soon after the work was com-eted, the earth and gravel were washed off the top of the approach and the cross-ties d cap-timbers were displaced.

During the fiscal year, 1902-03, the cross-ties and cap timbers were replaced in sition and the ends of the ties secured to the upper stones of the slope with blind edged bolts. Earth and gravel were again placed between the ties to a depth of ree inches above their tops, all openings on the sides were closed to prevent the avel from working out, and a plank walk, 3 feet wide, was placed along the lower le of the wharf. A pile bulkhead, 18 feet long and 9 feet wide, braced with walings d ties, was built from the lower corner of the Bentley wharf to the inner end of e span of the departmental work, the whole space, 120 feet long and from 10 to 20 et wide, between the two wharfs, was filled with brush and stone and the top was ished with gravel level with the top of the departmental wharf.

During 1903-04, the Bentley wharf (so-called) was acquired by the department, r the sum of $3,000, and in May, 1904, its repair was commenced, and also the con-ruction of a pile wharf of 55½ feet frontage and 48½ feet depth to fill the corner tween the departmental block and the Bentley wharf.

The repairs consisted in rebuilding the outer and upper faces of the Bentley arf of cribwork, ballasting and covering on top with 4-inch plank from 12 to 16 et wide. The inner portion was filled with brush, stone and gravel to the level of the vering, making the whole from 3½ to 4 feet higher than before.

A portion of the new wharf next the departmental block was constructed of a dth of 29 feet from the face, covered with 4-inch plank and partly filled with brush d stone. A bulkhead of piles and posts was built to prevent filling material placed

in the new work from sliding into the span behind the departmental block of 483 tons of stone was procured for the work.

The expenditure for the fiscal year 1903-04 was $2,060.96 not including t paid for the Bentley wharf and right of way.

The total expenditure to June 30, 1904, including $3,000 paid for th wharf, was $12,537.27.

BUCTOUCHE.

Buctouche river enters the Northumberland Starits about midway betwe bucto and Shediac by a narrow and winding channel 4 to 5 fathoms deep but with a ruling depth on the bar of only 8 feet at low water spring tides. gable for eleven or twelve miles.

Four mile from the sea is Buctouche village, Kent county, where a co trade is carried on in lumber, coal, fish, &c. In 1884-86 the department co here a wharf of round timber fendered with piles, about 300 feet long and 40 with a depth of 17 feet at low water or 21 feet at high water spring tides at The work is parallel to the shore and immediately below the road bridge spa Buctouche river. A siding of the Moncton and Buctouche Railway runs cl back of the wharf throughout its length.

In 1894, the wharf having been partially destroyed by fire, repairs were not completed.

In 1898-99 materials were procured and in 1899-1900 and 1900-01 the upp was repaired.

During the fiscal year 1903-04 the lower portion, 136 feet long was repai remains of the old cribwork were torn down to about low water mark and generally 8 feet apart, of 6 piles each, were constructed, ballasted, and cov 4-inch plank on a width of 25 feet. Four pile mooring posts were also dri inner 15 feet of the width of the wharf was filled with brush, stone and ea level of the covering and this filling was continued along the back of the upp where settlement had occurred, and extended as an inclined approach to bridge. On the approach from the street a new covering, 17 feet wide, was length of 128 feet and the cap-timbers were renewed.

The expenditure for 1903-04 was $2,438.93.

The total expenditure to June 30, 1904, was $10,964.80.

BURNT CHURCH.

Burnt Church, Northumberland county, is a farming, fishing and lumb tlement on the north shore of Miramichi bay, twenty-two miles north-east of and five or six miles south of Neguac. The Miramichi Steam Navigation C boat calls twice daily during the season and the place is much frequented as resort. During 1899-1900, a contract was let for the construction of a wharf long, composed of a shore block 200 feet long and 20 feet wide; twenty-th 21 feet long and 20 feet wide, placed 20 feet apart, and a pierhead 60 feet l feet wide, the latter standing in 9 feet at low water. Spring tides rise 5 f whole was constructed of round timber open cribwork, topped with 12 b stringers and 4-inch plank. The work was completed on September 15, 1901.

During 1903-04 complaints having been made that a dangerous rock l path of steamers approaching the wharf, an examination was made and found weighing about 10 tons, lying 300 feet above the wharf and 50 feet ou range of the pierhead. A blade broken from a steamer's propeller was fou it. With the aid of a diver, the boulder was blasted and removed.

Thirteen fenders were placed on the outside face and corners of the pie prevent damage to the steamer through catching on the face or on the iron the corners.

The outermost span of the wharf was also closed to give security to boats lying inside the pierhead, by placing three longitudinals one above the other between the blocks and spiking 3-inch hardwood plank close laid vertically to each side.

The expenditure for the year was $321.82.

The total expenditure to June 30, 1904, was $14,709.90.

CAMPBELLTON.

Campbellton, Restigouche county, a deal port from which 24,142,117 superficial feet of lumber was shipped in 1902, and an incorporated town of some 3,000 inhabitants, is situated on the southern side of the Restigouche river. It is directly opposite Cross Point, in Bonaventure county, P.Q., fourteen miles above Dalhousie, the shire town of the county and six miles below the head of tide water. Spring tides rise 11 feet.

In 1889, the department constructed a block, 140 feet long and 34½ feet wide on top, of close-faced timber cribwork, 108 feet below what was then known as the Ferguson wharf, and in 1892, another block of similar construction and width, to close the opening between the two works, giving a total frontage to the departmental wharf of 250 feet, with a depth of 12 feet at the outer face.

After the construction of the second block, the Ferguson work was sold to J. P. Mowat, and subsequently by him to Kilgour Shives.

As access could only be had to the departmental work by traversing the Shives' wharf, steps were taken in 1901 to acquire the latter, and as it was in need of repairs, materials were procured at a cost of $2,224.32 during the same year, to effect such necessary repairs, but the work was not commenced owing to delay in the purchase of the property.

During the fiscal year 1902-03, the Shives' wharf became vested in the Crown. The sum of $226.50 was expended during that year in caring for and looking after the timber procured for repairs.

During 1903-04, the repairs of the Shives' wharf were begun on the outside face 90 feet long, and for a length of 50 feet on the upper face. The old work was torn down to near low water level and walings were bolted to main piles on the face and to posts on sills inside and resting on the old work. A ballast floor was laid on the lower walings and covered with 8 feet of ballast. The whole was covered with 6-inch plank for a width of 18 feet on the front face and 15 feet on the upper face, and close piling was driven between the main piles. The inner portion of the wharf was graded level with the flooring with stones and earth. A new pile driver was also built.

On June 30, the work remaining to be done to complete the above repairs was :—driving about eighteen close piles, bolting the same, placing forty short pieces between the piles above the tops of the walings, and placing two mooring posts. A slight amount of grading also remained to be done.

The expenditure for the fiscal year 1903-04, was $7,684.18.

The total expenditure to June 30, 1904, was $26,818.44.

CAPE TORMENTINE.

Cape Tormentine, Westmoreland county, is situated on the south-western side of Northumberland straits, at the extreme eastern end of Westmoreland county. It is the terminus of the New Brunswick and Prince Edward Island Railway and the nearest point of communication between Prince Edward Island and the mainland, the distance being nine miles.

With a view to forming an artificial harbour for purposes of interprovincial communication between the island and the mainland during the winter, a breakwater pier was constructed by the department beween 1886 and 1892.

The structure comprises a straight pier (or approach) 2,500 feet long, the first 1,300 feet of which is a rubble mound 20 feet wide on top with pitched slopes of 2 to 1,

and the remainder of close-faced timber cribwork, 30 feet wide on top, a
and return of similar construction, each 400 feet long and 40 feet wide from
up to a little above low water, then decreasing to 30 feet at the finished top,
4 feet above high water spring tides. Between low water and the top of the w
head and return present a sloping face sheathed with hardwood to the east an
The whole incloses a basin or harbour of about four acres in area with dept
the autumn of 1892, of 13 to 15 feet at low water, but increased since then, b
ing over some parts, to a depth of 18 feet.

Spring tides rise 7¾ feet and neaps 3¼ feet.

Owing to the ravages of the teredo, repairs became necessary to the tim
tion of the work soon after its completion and have since been carried on a
They have consisted mainly in renewing the face timbers and sheathing of t
ing faces of the pierhead and return, protecting the north and portion of th
faces of the approach and about 300 feet of the outer face of the head with la
small stone, and driving close-piling along a portion of the south side of the a

During 1901-02, a temporary quay face 180 feet long was constructed al
outer or south face of the return, to afford landing facilities for the steamer '
plying between Cape Tormentine and Prince Edward Island during the winte

This work consisted of piles driven every 4 feet along the outer face
hardwood timber cribwork tied into the old work. Repairs were also made to
sections of the sloping face. Over 5,000 cubic yards of large and small sto
deposited along the northern and eastern faces of the approach and hea
creosoted piles were driven, generally 2½ feet apart, along the harbour side
pier, a frame building 100 feet long and 25 feet wide, for the reception of fre
also affording waiting rooms, was built on the return section of the work, an
feet B.M. of timber were delivered for levelling up 250 feet of the approac
had settled considerably, consequent upon the action of the teredo.

During 1902-03, 750 feet of the approach was raised from 6 inches to
and levelled by the addition of new face timbers, cross-ties and stringers,
115 feet the bays on the south side were filled with stone. The timbers were
with carbolineum. Seventy-five creosoted piles were driven 2½ feet apart al
dock faces and 24 along the outside of the quay face built in 1901-02. Th
face was also extended westward 25 feet and protected with boiler plates for
of 200 feet.

The south-east corner of the pierhead was straightened by a work comp
double close piling (73 piles in all) and walings, filled with stone, covered
inch plank and secured outside with 4 iron straps.

A movable platform 20 x 8 feet was built at the new freight shed and th
repaired. New face timbers and sheathing were placed on a length of 80 fee
sloping face. A new mooring post was placed and 1949:9 cubic yards of larg
and about 450 cubic yards of small stone were deposited outside the pier-h
along both faces of the approach.

During 1903-04, the raising and levelling of the top of the work was co
to the end of the approach, a distance of 330 feet and for 40 feet of the p
and an additional 60 feet of the pierhead was levelled but no covering laid
work on the pierhead is similar to that on the approach with the exception tha
of piles was driven every 5 feet inside the outer face and screw bolted to fa
bers and cross-ties. Sufficient timber for completing the work was procured.

On the section of the pierhead, 49 feet long, near the south-east corner,
timbers of the sloping face and of a part of the main work were removed nearl
water level, and a new crib and pilework with vertical face, protected by 42 cr
piles driven close on the outside, was built to a height of 4 feet above high
fully ballasted and covered with 5-inch plank. Slight repairs were made
planking of the return and to the freight shed, and movable platform 7 x
was built on the pierhead for the winter service and removed in the spring.

return, 30 feet of sheathing was removed on the sloping face. A new pile driver frame was built and 410 cubic yards of large and 89 cubic yards of small stone were deposited along both faces of the approach.

The expenditure for the year 1903-04 was $10,109.42.

The total expenditure on this work to June 30, 1904, was $313,190.92.

CARAQUET.

Caraquet, Gloucester county, a thriving fishing settlement and a station on the Caraquet Railway, is situated on the southern side of Baie des Chaleurs, 42 miles east of Bathurst, the shire town of the county.

For the purpose of establishing a deep water terminus for the shipment of lumber, a contract was entered into in March, 1902, with Messrs. Simmons & Burpee, Marysville, N. B., for the construction of a block and span wharf 1,700 feet long, with a depth, along the outer 300 feet, of 22 feet at low water. The contract price was $59,990. Spring tides rise 6 feet.

The wharf is to consist of an approach or shore block 255 feet long and 25 feet wide on top, 25 blocks 25 feet square on top, with sides battering 1 in 9 ; a pier-head 300 feet long and 40 feet wide, and 26 spans or openings of 20 feet each. The blocks are to be constructed of round timber open cribwork, and the openings spanned by double 12 x 12-inch timbers.

The work of construction was commenced on July 7, 1902, and at the close of the fiscal year 1902-03, had progressed as follows :—The cribwork of the approach or shore block and blocks Nos. 1 to 5, inclusive, were completed, ready to receive the corbels and stringers ; block No. 6 was constructed to within one tier of cross-ties of the required height, and blocks Nos. 7, 8 and 9, were built eight tiers high and placed in position.

At the close of the fiscal year 1903-04, the cribwork of the approach and first ten blocks were completed ready to receive corbels and stringers ; the cribwork of block No. 11 was built to within 3 tiers of the top ; blocks 12 to 19 were built to full height ; blocks 20 to 23 to about 2 feet above low water level and block 24, 19 tiers high.

A section of the pier-head 50 feet long was built 19 tiers high and a section 100 feet long to a height of four tiers.

The expenditure during 1903-04 was $11,629 including $10,700 on contract and $939 for inspector's services.

The total expenditure to June 30, 1904, was $17,695.23.

CHOCKFISH RIVER.

Chockfish river, Kent county, empties into Northumberland straits, about midway between the entrances to Richibucto and Buctouche harbours.

A sand beach extending from the north has rendered the entrance to the river circuitous and shallow. To produce a straight and deeper channel and safer entrance for fishing boats, the construction of a dam was begun in the autumn of 1901 to close the new channel 400 feet south of the original river mouth. It was built from the mainland a distance of 130 feet, the channel shifting outward around its end at the same time. The dam consists of a rubble mound 7 feet wide on top laid on brush mattrasses, through which were driven two rows, 7 feet apart, of piles spaced 5 feet centre to centre longitudinally.

In 1902-03 construction was commenced on the sand beach and continued shorewards to meet the old work, and an extension of 27½ feet long of lighter construction was built at the inner end of the latter, giving the dam a total length of 356½ feet. At the same time a trench was cut through the beach, about 300 feet north of the dam, which, under the influence of spring freshets, enlarged to a channel about 70 feet wide

with 8 to 9 feet of water at spring high tides, making a considerable improvem the old channel.

During 1903-04 a breakwater was built running south-easterly from the side of the new mouth. It consists of an inner length of 48 feet, formed of p cross-ties (8 bents) to carry a light tramway, with brush and stone between the drifting sand. A length of 348 feet constructed of 2 rows of piles 6 fe centre to centre each way with caps and two walings of 10 x 10 timber, filled with brush and stone with a slope on the seaward side, and an outer section long, constructed of three rows of piles, the outer row being driven close and the two inner rows 6 feet apart longitudinally, with cross-ties and 4 walings of 10 x 10 and 12 x 12 timber. The width over all of this p feet 6 inches. The interior is filled with brush and stone with the excepti bays which still require an additional foot of stone. The outside face is al protected with a brush and stone slope for which sufficient stone has been pro

The expenditure for the year 1903-04 was $1,993.80.

The total expenditure on this work to June 30, 1904, was $4,764.89.

CLIFTON.

Clifton (Stonehaven), Gloucester county, a station on the Caraquet is situated on the southern shore of the Baie des Chaleurs, 18 miles east of the shire town of the county, and 8 miles west of Grande Anse.

A breakwater at Stonehaven, originally 425 feet long and constructed b persons, was acquired by the department in 1878, and during the same year tended 325 feet, making a total length of 750 feet. The outer 220 feet is plac angle of 72 degrees with the inner portion and the whole constructed of ro square timber cribwork filled with stone and partly protected along the nort eastern faces by a stone talus. The harbour affords shelter for fishing ves for schooners engaged in the export of grindstones, &c., the depth at low wa 7 to 8 feet. Spring tides rise 7 feet.

During 1886-87, 1887-88, between 1891-93 and again in 1897-98 and 1898 eral repairs were made to the work, and a portion of the northern and east were protected by large stones of from ½ to 1 cubic yard in bulk.

In 1899-1900, two openings in the eastern face, 16 and 19 feet wide, we and other repairs were made; materials were also procured for the construc block 70 x 40 feet at the western end of the breakwater, for the purpose of p the stone placed along the northern face from being swept around the en easterly storms. During 1900-01 the timbers for the proposed block were fr the old work was repaired for a length of 103 feet.

In 1901-02, the top of the outer 200 feet of the breakwater was stripped longitudinals, cross-ties and covering placed; a tramway was built along the face; 719 cubic yards of stone were placed along the northern and eastern f minor repairs made to cap, fenders and face timbers. The substructure of block, 70 x 40 feet of close-faced cribwork, was also constructed 11 tiers, or inches high, and successfully placed at the western end of the breakwater.

During 1902-03, the new block was completed, the total height being inches. It is covered with 6-inch plank, with 12 x 12 caps and 10 x 10 fend three iron straps at each corner. Thirteen 10 x 12 fenders, 15 feet long, we along the northern face of the old work and 900 cubic yards of large stone outside the same face.

During 1903-04 a new break was constructed along the northern face and consists of two tiers each of cross-ties and longitudinals with stringers a covering, the width being 6 to 6½ feet. The outer face of the wharf received of 10 by 12-inch timbers laid close, and continued the whole length of the

face for a length of 223 feet. The turn-table, at the end of the tramway, was raised to the height of the new break and the tramway rails along the eastern face of the approach were graded to the new height by means of extra ties over a length of 120 feet. The interior of the new break was filled with ballast. This work replaces an old break constructed of face-timbers and knees which was much out of repair. The outside face was also strengthened by the addition of thirty-four fenders.

A ramp 17 feet 6 inches wide and 17 feet long of cross-ties, stringers and 6-inch covering and filled with ballast, was built on the western end of the L to enable teams to ascend to the new pier-head.

741 cubic yards of large stone were deposited on the northern and eastern faces of the work.

The expenditure for the year 1903-04, was $2,289.50.

The total expenditure to June 30, 1904, was $293,075.94.

CROSS POINT.

Cross Point, Restigouche county, is situated on the north shore of the Restigouche river, opposite the town of Campbellton, N.B.

In the year 1902-03 the sum of $10,045 was authorized for the construction of a landing pier at that place. The contract was awarded in March, 1903.

During the year 1902-03 the sum of $6,907.97 was expended on the work.

During the year 1903-04 the contract was completed and the amount expended during the fiscal year was $3,137.03.

EDGETT'S LANDING.

Edgett's Landing, in Albert county, is on the west side of the Petitcodiac river, two miles below the village of Hillsborough.

To replace an old provincial government work, destroyed by the Saxby gale in 1869, the construction of a wharf was begun twenty years later by the department, and was finally completed in the fiscal year ended June, 1903. The wharf is 400 feet long, composed of an earthen approach 20 feet wide, and 50 feet in length ; round timber cribwork 250 feet, and square timber cribwork 100 feet long. The head is 40 feet wide. Spring tides rise 46 feet. The pier head, 35 feet high, stands in 30 feet at high water and is dry at low water.

Renewal of the covering, which had become decayed, and levelling up of the stringers, which had settled, was begun in May, 1900, and was completed in 1900-01.

During the fiscal year 1903-04 the approach, 270 feet long, was raised above tide level with brush and gravel, protected on each side by stone. Thirteen broken cross-ties were replaced with new ones 12 feet in length ; slight repairs were made to the covering and two new mooring posts 15 inches in diameter were placed in position.

The total expenditure to June 30, 1903 amounted to $9,930.95.

The expenditure during the fiscal year 1903-04 was $410.

FORT DUFFERIN.

Fort Dufferin, St. John county, built by the imperial government to command the western entrance to St. John harbour, stands on high ground immediately above the end of Negropoint breakwater. In order to preserve from erosion by the waves the headland crowned by the battery, this department began in 1882 at tide level a retaining wall of sheathed cribwork 430 feet in length, and in the following year constructed a further length of 303 feet. The work is exposed on the one hand to the force of the waves, and on the other hand to land slips.

In 1886-87, it was much disturbed by the sea and repairs were made in that and the following years, 205 feet of the original work being rebuilt. From 1887 to 1889 repairs were also made, and in 1890 the work was extended 100 feet.

General repairs were made in 1893-94. The work is from 7 to 14 feet wide on top, and about 9 feet in mean height. The crest for the whole length is surrounded by a break 2½ feet high.

During the year 1896-97, a gap 81 feet long in the break was repaired, and the sheathing was patched at intervals along the face with hardwood planking. In order to raise the beach, and so protect the lower part of the face, toward the end of 1896, a groyne 40 feet long, 10 feet wide and 4 feet in average height, was built of hardwood piles, timber and stone. In 1897, extension of the cribwork a distance of 130 feet was begun, and by the end of the fiscal year had been brought within two tiers of the full height.

In 1897-98, the new extension was completed, ballasted and sheathed. Small repairs were also made to the sheathing of the old work.

In 1898-99 four groynes, in all 232 lineal feet, each built of hardwood piles spaced 4 feet apart, driven from 9 to 12 feet into the bottom and planked with birch 9 inches square, securely strapped and bolted, were placed along the beach to protect the lower part of the sheathing of the breast-work; some ballast was also placed in the cribwork.

Ordinary repairs comprising restoration of a breach in the face, ballasting and renewal of the sheathing, were made during the year 1899-1900.

In 1900-01, the face was sheathed for 145 lineal feet; ten piles were driven to restore, with the addition of cribwork, a breach 11 feet long. At the upper end, the breast-work was repaired for a distance of 235 feet.

In 1902-03, the face of the breast-work was protected with close piling for a length of about 178 feet. An extension of the protection was made for a distance of 94 feet by driving close piling, secured with double walings and stiffened by bracing fastened to piles driven 13 feet in the rear. The inside of this work was partially filled with brush and stone.

During the fiscal year 1903-04, a new block, 70 feet long and 20 feet wide of close-faced cribwork, was built at the inner end of the breast-work. The cap of this block is flush with the break of the old work. The total expenditure to June 30, 1903, amounted to $26,671.64.

The expenditure during the fiscal year 1903-04, was $3,499.66.

GRANDE ANSE.

Grande Anse, Gloucester county, a station on the Caraquet Railway and a fishing and farming settlement with a population of between 700 and 800 inhabitants, is situated on the southern shore of Baie des Chaleurs, twenty-five miles north-east of Bathurst, and fifteen miles west of Caraquet.

For the purpose of affording shelter to the fishing boats of the locality and others frequenting Baie des Chaleurs, the department, in 1876, commenced the construction of an isolated breakwater placed between 500 and 600 feet from the shore, and subsequently extended it to a length of 397 feet, 159 feet of which forms a shore arm, and the remaining 238 feet a head, nearly at right angles to the former with a sloping face of 1 to 1, on the north or seaward side.

To give increased protection to the fishing boats, a contract was entered into during 1901-02, with J. W. Dumas, for the construction of an extension of close-faced cribwork 250 feet long, 21½ feet wide, and from 10½ to 13½ feet high to extend from the inner end of the present work shoreward, and also for the removal of material consisting of sand, mud and stones which had accumulated inside the harbour formed by the original work.

At the close of the fiscal year 1901-02, the extension was constructed an average height of 7½ feet on a length of 264 feet, the required length of the work at the bottom, and 30 cubic yards of material had been removed from the area required to be dredged.

During the year 1902-03, the extension was completed and 1,470 cubic yards of material were removed by dredging. Repairs were also made to the old work during

the year, viz.: driving six fender piles and rebolting seven loose ones on the north side, inserting five new face timbers, 10 yards of ballast, renewing part of the sheathing in a length of 20 feet of the sloping face, placing a ladder and close fendering 20 feet of the inner face.

During the fiscal year 1903-04, the remainder of the dredging required by the contract with J. W. Dumas, was completed with the exception of 800 cubic yards which could not be removed by any local dredge as the material was too hard. As the required depth had been attained over the area most in use, a settlement was made with the contractor by payment of the amount remaining due on the contract price, $10,900, less $480, for dredging not performed.

Repairs were also made at the north angle of the old work where, for a length of 27 feet, the sloping face had been carried away leaving intact the original vertical face of the wharf. Twenty-three new fenders laid close were placed to strengthen the old face. The bay, 12 feet long, of the sloping face adjoining the break, was strengthened by placing an extra set of cross-ties inside and at the end, which was also protected by close fendering, extra longitudinals inside and by filling it with ballast.

The total expenditure for the year 1903-04 was $2,515,69 of which $2,180 was under the contract, $65 for inspection and $270.69 for repairs.

The total expenditure to June 30, 1904 was $34,031.11.

HOPEWELL CAPE.

Hopewell Cape, in Albert county, near the mouth of the Petitcodiac river, and at the head of deep water navigation, is one of the several works on that stream intended for the convenience of shipping. For the use of vessels proceeding to Moncton, Hillsborough and Dorchester for cargoes, the department in 1883 began the construction of a ballast wharf of round timber cribwork, 300 feet in length and 22 feet wide, which was completed in the following year. In 1885, the work was extended to the present length of 583 feet by an addition built of square timber. The covering, stringers, and other upper timbers having become decayed, preparations were made in 1899-1900 (the appropriation being very small) for repairing the work, by the purchase of materials. By the end of that year a part of the timber had been delivered.

In 1900-01 the outer end for a length of 283 feet, was rebuilt for a height varying from 4 to 6 feet. The top of the pier-head was also rebuilt.

By a fire, which destroyed part of the village of Hopewell Cape, the top of the inner end, 300 feet long, of the ballast wharf was burnt. The fire obtained lodgment in the decayed internal timbers of this work, and was with some difficulty extinguished in time to save the outer end of the wharf, which is built of square timber cribwork.

During the fiscal year 1903-04, the burnt timbers of the ballast wharf were removed, and the square timber cribwork was rebuilt from 3 to 6 tiers to the level of the stringers.

The round timber cribwork was also rebuilt to the height of 2 tiers and was brought up to the level of the under side of the stringers, the voids under the lower ballast floor being filled with stone. On the north side, the footing stones of a new slope were placed for 70 feet and one tier of the slope was laid for the same distance. On the south side of the work, the footing stones were laid for a length of 54 feet ; while the first tier of the slope stones was carried 33 feet and the second tier 10 feet in length. The brush mattrass, on which the slope is being placed, was laid for 200 feet, the full length.

The total expenditure to June 30, 1903 amounted to $10,767.82.

The expenditure during the fiscal year 1903-04 was $4,641.83.

HOPEWELL HILL.

At Hopewell Hill, in Albert county, on Shepody river, an arm of the Petitcodiac, a contract was let in 1900-01 for the erection of a new public wharf of round timber

cribwork. Construction was commenced in June, 1901, and the work was completed in November of the same year. The wharf, 101 feet in total length, consists of a stone approach 24 feet long and 30 feet wide on top; 2 blocks, each 20 by 40 feet, and two intervening spans of 15 feet. The blocks are of open cribwork, planked on top, and fendered on the sides.

In the fiscal year 1902-03, a right of way to the wharf, 66 feet wide, was acquired, and a road, 500 feet long and 20 feet wide on top, composed of alternate layers of brush and clay, was built. The road, which is outside the dykes, is altogether in embankment, the fill being 10 feet in maximum depth. The work comprehends 2,216 cubic yards of brush and clay in about equal parts. In the deepest part of the filling, a culvert 32 feet long was built.

In 1903-04, a bed for vessels to ground upon at low water, 73 feet long, 25 feet wide and 10 feet high at the outer end, was made of cribwork, brush and clay, on the lower side of the wharf.

The total expenditure to June 30, 1903, amounted to $4,603.14.

The expenditure during the fiscal year 1903-04 was $244.56.

LITTLE SALMON RIVER.

Little Salmon river, a tidal inlet of the Bay of Fundy, 14 miles east of Quaco, in the county of St. John, is the site of a mill producing lumber to the value of about $25,000 annually. At this place, spring tides rise 30 feet. The beach protecting this little haven, being in danger of denudation, a protection work, 430 feet long, with a groyne 92 feet long, of piles and planking extending along the crest of the beach, was built during the fiscal year 1902-03.

A heavy storm scoured the beach below the level of the protection, and having carried away the groyne, two streaks of planking were added and the groyne was rebuilt during the fiscal year 1903-04.

The total expenditure to June 30, 1903, amounted to $714.48.

The expenditure during the fiscal year 1903-04 was $634.78.

LORD'S COVE.

Lord's Cove, Charlotte county, a small fishing station on Deer island, is a port of call for steamers plying between St. Stephen, St. Andrew's, Eastport, and other points in Passamaquoddy bay. To afford facilities for this steamer, the construction of a wharf was begun in 1900-01. Spring tides rise 24 feet.

The wharf, without the approach, is intended to be a pile and trestle work, 328 feet long and 21 feet wide, with a pier-head 33 feet in height.

During the fiscal year 1902-03, this wharf was extended to the back of the pier-head, a length of 120 feet, by driving 12 bents and by completing the laying of the covering and the cap. A gallows-frame, ladder and flight of steps were also made, in order that the public might make immediate use of the wharf.

The work was then 289 feet long, exclusive of the stone approach, 28 feet in length.

In 1903-04, the pierhead (50 by 40 feet) was built, to which 17 fenders and 58 short braces yet remain to be applied. The work is now 328 feet long and 21 feet wide, with a pierhead 35 feet in height. The wharf is approached by a stone embankment, 28 feet long, and a rock cutting 61 feet in length.

The total expenditure to June 30, 1903, amounted to $3,000.

The expenditure during the fiscal year 1903-04 was $1,050.

MISCOU.

Miscou harbour is at the extreme northern end of the county of Gloucester, between the Shippegan islands and Miscou island, on the eastern entrance from the Gulf of St. Lawrence into Baie des Chaleurs.

At low water the harbour has an area of about five square miles, it is well protected from the prevailing winds and has good anchorage. The main entrance into the harbour is from the Baie des Chaleurs, on the west, where a channel 5 to 7 fathoms deep can be found. The eastern entrance from the Gulf of St. Lawrence, is known as Miscou Gully, which is a narrow passage left between the beaches extending from the two islands.

The population of Miscou island is about 500, occupied chiefly in fishing, seventy-five fishing boats are owned in the island and eleven lobster factories have been established.

The exports for 1902 amounted to $75,000 (chiefly lobsters, herring and codfish) and the imports $50,000.

In order to afford landing facilities on the harbour front for the inhabitants of Miscou island, the department entered into a contract, on April 27, 1904, with Messrs. Burns & Charleson, for the construction of a wharf, at this place. The wharf will consist of a shore block 200 feet long by 20 feet wide, seventeen blocks each 20 feet square and eighteen spans of 20 feet, and a pierhead, 40 x 30 feet, placed in 3·8 feet of water at low water ordinary spring tides. The contract price is $13,700. Spring tides rise 6 feet.

Construction had not been begun at the end of the fiscal year 1903-04.

Expenditure in calling for tenders, &c., $73.72.

MISPEC.

Mispec is situated on the north shore of the Bay of Fundy, eight miles east of St. John, in the county of that name. Near the outer end of a narrow cove, which receives the discharge of Mispec river and constitutes the harbour, the department built on the west side in 1885 a breakwater, 197 feet long, 25 feet in mean width and 30 feet high at the outer end.

Repairs were made in 1889-90 to the seaward face, and again in 1892-93. In consequence of the establishment at this place of a pulp-mill, capable of producing 40 tons per day and employing 150 hands, repairs to the work were begun in 1898-99, when a sum of $800 was expended in procuring materials ; in replacing seven tiers of the face for a distance of 74 feet along the work with heavy birch timbers, 16 inches square, secured by screw bolts, and in ballasting the work.

The breakwater was, however, found insufficient for the protection of the rafts of pulp wood and also of the schooners and lighters engaged in carrying coal, sulphur and limestone to the mill, or in transporting pulp when manufactured from the mill to St. John for shipment. On this account, a contract for a new breakwater to be placed on the east side of the entrance was let in 1900-01. In the same year preparations for the foundation of this work were begun by benching the rough rock, at expenditure of $743.57.

In 1901-02, the new breakwater, 168 feet long, 34 feet wide on top, 50 feet wide at the bottom, and 30 feet high at the outer end, was completed.

At the same time, the original work on the west side was repaired and raised to the same height as the new breakwater ; 79 feet of the sloping face were sheathed with 6-inch spruce plank ; a new set of longitudinals was laid for part of the length of the work, and a new set of cross-ties, stringers and covering for the whole length. The outer and inner faces were constructed of square timber for a height carrying between two and six tiers, and the inner face, outer end and outer face were fendered. Additional ballast was also placed in the whole of the work.

In 1903-04, new longitudinals of heavy birch were placed for a distance of 70 feet in the sloping face, on which new spruce sheating was laid. Eleven new fenders were placed on the outside of the work, a ladder was made, the sloping face was strapped with iron and the wharf was ballasted.

The total expenditure to June 30, 1903 amounted to $26,213.

The expenditure during the fiscal year 1903-04 was $991.68.

NEGROPOINT.

Negropoint, St. John county, is a headland about 60 feet above high water mark at the western entrance to St. John harbour, which is formed by the estuary of the River St. John on the northern side of the Bay of Fundy. Spring tides rise 25:33 feet. Neaps 15 to 20 feet.

In addition to convenience of position for distribution by rail of cargoes landed at the city of St. John, the harbour is remarkable principally for great tidal range, and for consequent freedom from ice in the winter months. The harbour is open, broadly speaking, from south-east to south-west, waves are mitigated by Negropoint breakwater, while the Foul Ground, a shoal tailing down from peninsula on which the city is built, must have more or less effect in moderating the force of the easterly seas rolling round Mispec Point.

By Partridge Island, a rocky eminence devoted to quarantine and lighthouse purposes, the entrance of St. John harbour is divided into east and west channels. In the former or main channel, a minimum navigable depth of 19 feet is found on the bar at low water at ordinary spring tides. Two hundred yards inside the crest of the bar, a depth of five fathoms is obtained in the narrow fairway, while higher up and between the most southerly of the principal wharfs on either side of the harbour (450 yards wide at that point), twelve fathoms are given in mid-channel. The west channel 10 to 14 feet deep at low water, and originally 120 yards wide, has been contracted to about as many feet in breadth by Negropoint breakwater, which extends 2,200 feet SE. by S. from the headland so styled.

The reasons for undertaking this work are thus stated in the reports of the Minister of Public Works for 1875 and 1882 :

1875. This breakwater extends south-easterly from Negropoint at the western entrance of St. John. When completed it will extend a distance of 2,500 feet, closing up the west channel to that extent, leaving, however, a width of 1,100 feet between the outer end and Partridge island. The object is to break the force of the seas which roll into the harbour of St. John during the south-west gales in the Bay of Fundy, and which render it dangerous and almost impossible at such times for vessels to make the harbour.

1882. South-westerly winds threw in a heavy sea through the western channel which renderd it difficult for vessels to make the harbour, as they were in danger of being carried on the Foul Ground on the eastern side of the channel. In the spring of 1875, a breakwater 2,250 feet long to partially close the western channel was begun, and in September, 1877, completed.

Reference to the chart will show that as long as the present opening remains, the object of the breakwater has been only partially fulfilled. In dealing with the reduction of the bar, a more cogent reason than improvement of shelter may be found for the extension of the work to Partridge island.

The breakwater consisted at first of a cribwork core, 30 feet wide at the base, and 15 feet wide at the top (5 feet above high water ordinary spring tides), protected on both sides by large stones sloping to seaward at the rate of two to one, and landward at the rate of one to one. In the month of February, 1879, thirteen hundred lineal feet of cribwork were swept away to a depth varying between 13 and 19 feet from the top, the stones having been raked down by the wave-action to a slope more nearly resembling the angle of repose of the material. In 1880, temporary repairs were made, and in 1881 a contract, completed six years afterwards, was entered into, whereby the lost cribwork was replaced by heavy stones and the seaward slope made three to one. Even this flatter inclination proved too steep for stability; consequently, notwithstanding their size, the stones, though smoothly laid, were soon displaced by the sea. A length of 50 feet of the breakwater extending at full height beyond a masonry pier, built under the same contract to support a beacon, was also swept away. From 1891 to 1894, desultory repairs were made by the addition of large stones, chiefly deposited about the end to prevent the lighthouse from being undermined.

In May and June, 1895, four large blocks of concrete were placed for the purpose in front of the base of the pier. In 1895-96, seven concrete blocks, founded about the level of low water neaps, were built in situ round a quadrant of the outer end to receive the foot of a slope proposed to be made of heavy granite blocks laid at the rate of four to one. The concrete blocks were from 59 to 91 tons each in weight, all but the heaviest being laid in one tide. The granite pier was also reinforced by a semi-circular skin of concrete 7 feet in average thickness and strongly battered, placed round the front, and brought to the level of high water spring tides. The footing blocks were 15 feet long, 12 feet wide and unless varied for the sake of foundation, three feet high in the face, sloping upward at a rate of four to one on the top. Each block was free to settle independently, but all were keyed together by splayed concrete joggles. Inside a part of the space within the quadrant, stones of the original work added to small granite were assembled and grouted, as far as funds permitted. This course was taken in default of the heavy granite (which would require special plant) necessary for the slope of this breakwater, where height is the great disideratum.

Pending consideration of works necessary for deepening the entrance to the harbour, which might possibly involve the extension of the breakwater, nothing more was done during the year 1896-97, except the completion of the break at the shore end, than appeared requisite to protect the unfinished superstructure just begun, and to preserve the lighthouse.

To this end fifteen blocks of concrete, forming aprons, were laid in position at the outer end of the work, between October 1896 and June 1897. A quantity of stone which had been swept round the point of the breakwater from the seaward to the harbour side was also replaced in position. Some of this stone was laid outside the heavy footing blocks, built in the previous year, and some was applied to restoration of the crest of the work at the back of the lighthouse. Breaches carried below the level of high water had been made by the sea at five or six points in the rubble mound between the lighthouse and the shore. An illustration of the violence of the seas which assail Negropoint breakwater is afforded by the removal of a stone, which weighed five tons, a distance of 76 feet in one winter. A marine dynamometer secured to the masonry of the lighthouse records the wave-force at 4,000 pounds and upwards per square foot.

In order to retain for natural protection, along the seaward face of the work, the littoral drift formerly swept by the waves over the top into the harbour, a break of piles, brush, stone and timber, 270 feet long, 8 feet wide and 4 feet high, begun in 1895, was completed in 1896-97, and was also extended 140 feet along the timber work that year with good effect. As a result of the construction of the break, the foreshore has advanced seaward, while the beach has increased in height and breadth.

Besides the general accretion of the beach, a tongue of drift, observed after the erection of the break to be near the shore, has at the foot of the talus on the seaward side, travelled 200 yards or more toward the outer end of the breakwater.

The formation of this spit, generally 10 feet wide and 2 feet high against the work, indicates that the drifting sand, gravel, shingle, &c., which formerly went over the breakwater into the harbour, will in time afford important natural protection to the work, and will reduce the length of the face to be maintained.

During the year 1897-98, as a measure of precaution, 152 yards of granite were obtained and deposited about the lighthouse for protection during the winter, while stones previously removed by the sea were replaced in position.

The advance of the foreshore rendered necessary in that year the enlargement of the timber break, which was extended a distance of 80 feet along the breakwater.

A small groyne was also built for the purpose of obtaining some information as to the quantity of the littoral drift near the shore end. To preserve the timber, the top of the piles and the knees of the break were given two coats of pitch.

One thousand and nineteen cubic yards of granite were supplied and laid in place in 1898-99; while 285 yards of the original stone of the work, displaced by the sea, were restored in position.

During 1899-1900, 414 cubic yards of granite were delivered and placed round the lighthouse. Six hundred and six cubic yards of dislodged stone were put back. Five concrete blocks, containing 52·1 cubic yards, were also laid in place.

In 1900-01, five blocks of concrete, aggregating 54½ cubic yards, were built in situ; 1,313 cubic yards of new granite were received and placed, while 1,893 cubc yards of the original stone of the breakwater, removed by the sea (which on November 8, 1900, made two clear breaches through the work) were restored to position. The timber break was also extended two tiers for a distance of 40 feet.

During the year 1901-02, 4,694 cubic yards of large stone, principally granite, together with 719 cubic yards of small stone, were delivered and placed in position. A number of large stones of the original work, amounting to 1,713 cubic yards, which had been dislodged by the sea, were restored to place by means of a floating steam derrick. Repairs were also made to the derricks and buildings.

During the fiscal year 1902-03, 4,603 cubic yards of large and 600 cubic yards of small stone, were delivered and placed at Negropoint breakwater. This material was chiefly applied to restoring the point of the breakwater to the original length; that is, by extending it 50 feet beyond the light-house. Although the stones were of large size, averaging a little less than 1½ cubic yards (while some attained the bulk of 5, 6 and even 7 cubic yards each) a part of the restored point was swept away by the heavy storms of the winter. Besides the new material added to the work, 2,201 cubic yards of the original stone of the breakwater, which had been dislodged by the sea, were, by standing or floating derricks, shifted and replaced either on the point of the breakwater or in the gaps made in the crest. The covering of the cribwork was also patched in places, the plant overhauled, and a derrick for hoisting boats erected near the shore end.

Until the work has either been extended to Partridge island or has received a permanent superstructure, constant repairs will be required.

In 1903-04, 12 blocks of concrete, aggregating 417 cubic yards, were made in place. Before the concrete was made, 124 cubic yards of large stone, taken from another part of the work, were placed round the lighthouse for protection. The break was raised 2 feet in height for a length of 175 feet.

The total expenditure to June 30, 1903, amounted to $515,256.61.

The expenditure during the fiscal year 1903-04 was $12,153.83.

PARTRIDGE ISLAND.

Partridge island is a rock eminence standing at the mouth of St. John harbour, and dividing the entrance into east and west channels. The island is devoted to quarantine and lighthouse purposes.

At the northern end of Partridge island, two narrow piers of cribwork, built many years ago, give shelter to the boat landing at the station. Between them, a substantial block of new cribwork, 50 feet long and 22 feet wide, begun and nearly finished in 1896-7, as a foundation for the disinfecting house, was completed in the succeeding year. A boat slip, intended for use at low stages of the tide, was partially built, a new mooring post put in, and minor repairs to the end of the west pier were made at the same time.

In the fiscal year 1902-03, the west pier of Partridge Island, 121 feet long and 17 feet wide, was raised by the addition of one tier of cross-ties, new stringers, covering and cap. A house 14 x 24 feet, was built for the boat of the medical officer and a new derrick (excepting the mast) was made for the purpose of launching or landing the boat, the weather being too rough in the winter to allow it to lie afloat.

From the east pier, 110 feet long and 20 feet wide, 11 fenders were removed and were replaced by new ones. The break was strengthened by the addition of 7 new knees ; the boat-shed was shifted ; the derrick rebuilt and a new cap laid. The top was also covered throughout with two thicknesses of 2-inch plank.

During the fiscal year 1903-04, the approach of round timber cribwork, to these piers was reconstructed. This part of the work is 75 feet long on the centre line, 16½ feet wide on top and 14 feet high, with an additional platform 17 x 18 feet. The top was covered with hemlock plank and a hand-rail was put up round it. Ballast floors 30 feet in length, composed of double deals, 3 inches thick, were placed in the west pier and covered with 4 feet of ballast. Five bays of the inner face were sheathed to prevent the loss of ballast, for a height of 8 to 18 feet, and the ballast, which had been washed into the slip and obstructed the boat landing, was removed.

The total expenditure to June 30, 1903, amounted to $6,777.39.

The expenditure during the fiscal year 1903-04, was $500.

PETIT ROCHER.

Petit Rocher, Gloucester county, is a farming, fishing and lumbering settlement on the south-western side of Baie des Chaleurs, 12 miles above Bathurst.

On May 31, 1904, a contract with Mr. Simon McGregor, of Dalhousie, was signed for the construction of a breakwater at Petit Rocher.

The work will consist of a main breakwater 209 feet long on the outside and an L placed at an angle of 74° 30′ with the main part, 160 feet long on the outer face. The width on top will be 30 feet. At the nearest point the breakwater will be 450 feet from the shore and it will lie in from 12 to 19 feet of water at low water ordinary spring tides.

The contract price is $32,900.

Construction had not begun up to the end of the fiscal year 1903-04.

Expenditure in calling tenders, &c., $351.65.

POINTE DU CHENE.

Pointe du Chêne, Westmoreland county, lies on the western side of Northumberland straits, on the south-east side of Shediac harbour. It is the terminus of a branch line of the Intercolonial Railway and of the steamer 'Northumberland,' running during the season of navigation from Summerside, Prince Edward Island.

The works at Pointe du Chêne consist of an inner and outer breakwater, each 600 feet long, with an opening between of 80 feet, and a ballast wharf (so-called) 200 feet long, connecting the outer breakwater with the Intercolonial Railway wharf.

During 1902-03, repairs were made to the outer breakwater, as follows : 6 pieces of loose boiler plate at the foot of the sloping face were removed and 50 lineal feet of face timbers inserted, over which, the 6 boiler plates and 3 new ones were laid; 2 fender-piles were driven and 3 pieces of sheathing of the sloping face were renewed. Chocks were inserted behind 12 fender-piles which had started out from the work and the tops of fenders projecting above the top of the work were cut off. The covering and stringers on a length of about 50 feet, damaged by a storm in the autumn of 1902, were removed and piled.

During the fiscal year 1903-04 repairs have been in progress on the damaged section of the outer breakwater, where, for a length of 109 feet, the old covering was removed, and the stringers were secured and covering relaid over a length of 31 feet. For 72 feet, on the outer face, the face timbers, sheathing, cross-ties and longitudinals were removed to near low water level, and the cross-ties replaced at intervals of 5 feet instead of 10 feet, as formerly ; double face timbers, inner longitudinals, and stringers placed, and all the timbers of the face strongly screw-bolted together. Fifty feet of new covering was also laid on this section. The 72-foot portion has been raised 2 tiers higher than before and levelled; a further length of 80 feet was filled with ballast.

The expenditure during the fiscal year 1903-04 was $1,746.68.

The total expenditure to June 30, 1904, was $82,941.49.

QUACO.

Quaco, St. John county, is on the northern coast of the Bay of Fundy, about 30 miles to the north-eastward of the entrance to St. John harbour. The bay is semi-circular, and lies open to the south-east, between Quaco Head and Macomber Point, some 2 miles apart, the breadth from a straight line drawn between these capes being about a mile. At the mouth of a small river discharging into the eastern end of the bay, a harbour of refuge has been formed by the construction of two piers, the eastern work 310 feet and the western 302 feet long. The harbour is dry at low water, and is only accessible for about six hours during each tide, to the coasting vessels which come to load timber or to seek shelter. Spring tides rise 30 feet; neaps, 23.

In 1896-97, repairs were made to the west pier for a distance of 149 feet, the sheathing of the sloping face, and several face-timbers being renewed with birch, 14 inches square, secured with screw-bolts, and a quantity of ballast being replaced. A couple of fenders and a ladder were also added. At the same time, the east pier was protected from the scour of the stream by brush and stone, 13 new fenders were applied, and the decayed tops of five others were replaced by sound material. Small repairs were also made to the covering and sheathing, and another ladder was provided. The whole expenditure in that year amounted to $1,377.51.

In 1897-98, a sum of $50 was applied to closing a small opening and strapping the angle of the west pier, which had been struck by a schooner.

In the fiscal year 1902-03, the sloping face of the east pier was reconstructed for a length of 70 feet, the outer end being 10 tiers in height, and the inner 7 tiers high.

In 1903-04, the repairs to this face were completed and were extended for an additional length of 19 feet, the whole being covered with sheathing. Four new mooring posts were inserted; a new corner fender was placed and the cap and covering received minor repairs. Some pieces of sheathing were also placed on the west pier.

The total expenditure to June 30, 1903, amounted to $38,994.66.

The expenditure during the fiscal year 1903-04 was $450.08.

RICHIBUCTO.

Richibucto, Kent county, lies on the eastern side of Northumberland straits, about midway between the entrances to the Miramichi bay and Shediac harbour. It is the shire town of the county, a deal port and a terminus of the Kent Northern Railway.

The entrance to the harbour is between two sandy beaches known as 'North Beach' and 'South Beach.' The works originally proposed for the improvement of the harbour were two breakwaters, one to extend from the southern point of the North beach 1,200 feet, and the other to run in a north-easterly direction from the south beach, the object being to confine the water to one permanent channel and so scour the bar at the entrance.

In 1873 and 1874, the north pier was constructed for a distance of 1,200 feet. In 1876 it was found that the sea, during easterly storms, followed the inside of the breakwater, whirled around the upper end and endangered the beach. From 1880 to 1882, protection works were extended westward along the face of the beach to prevent erosion. Extensions in the same direction were continued during the years 1888, 1889, 1890 and 1891, for lengths of 200, 300, 94 and 140 feet respectively, making the works a total length of 2,158 feet, composed principally of brush, stone and piling.

Repairs to the inner part of the eastern section were undertaken during the years 1898-99, and at the end of June a section of 238 feet in length was nearly reconstructed, and another 593 feet partly repaired and raised 3 feet.

In 1899-1900, the work commenced during the previous year was completed. Off the harbour face a pile, brush and stone groyne, 33 feet long and 15 feet wide, was constructed, and another of the same length rebuilt. Off the inner face two brush groynes each 191 feet in length were built, and off the northern face of the breakwater, near the outer end, a new breast-work 470 feet long and 8½ feet wide, consisting of pile frame work, sheathed on the outside and filled with brush and stone, was constructed.

In 1900-01, a steam derrick was built for pile driving and handling large stone, three additional stake and brush groynes, aggregating 262 lineal feet, were built off the inner face of the eastern section and a protection work 26 feet wide and variable in height, consisting of mattrasses (formed of fascines and evergreen brush) pierced with piles and weighted with stone, was commenced on the harbour side of the outer section, 1,180 feet inward of the outward end and partially built outward for a distance of 492 feet.

In 1901-02, work was resumed in August with a view to continuing the protection work of the previous year a total distance of 866 feet, or out to within 300 feet of the outer end, and from the latter point, building an extension of 315 feet in length running in a south-easterly direction. One hundred and thirty feet of the extension was partly built and then, owing to the difficulty in procuring materials, work was closed down at the end of September. Plans were prepared and tenders called for the completion of the work.

The protection work is similar to that commenced during the previous year while the extension consists of brush mattrasses placed on the bottom, weighted with small stone, pierced by three rows of piles, driven 5 feet apart longitudinally and 4 feet transversely, and finished with large stone, forming a top 12 feet wide and sides sloping 2 to 1.

In February, 1902, a contract was entered into for the completion of the unfinished extension and protection as above. Work was commenced in the latter part of May and at the close of the year four mattrasses, 60 x 26 feet, had been placed for the protection work. Twenty piles were driven in the extension and 295 cubic yards of stone were delivered and placed in the work.

During the year 1902-03, the contract work was continued, and at the close of the year had been completed with the exception of delivering and placing about 855 cubic yards of slope and 350 cubic yards of core stone, adjusting some portions of the laid slope and filling in voids between the large stones.

Slight repairs were also carried on during the year by day labour, viz., protecting with brush and stone three sections at the back of the old work (immediately to the westward of that under contract) from undermining, the first section 50 feet long and 7 feet wide, the second 60 x 5 feet, and the third 70 x 3 feet. A quantity of stone left piled on one of the sections of the work was evenly distributed over a length of 600 feet and the tops of 150 piles and portion of the break timbers were given a coating of tar.

The contract work was completed on November 30, 1903, and the final estimate amounted to $21,793.43, being the contract price, $22,900, less $1,106.57, for materials supplied to the contractors by the department.

The expenditure during the fiscal year 1903-04, amounted to $583.

ST. JOHN RIVER AND TRIBUTARIES.

The River St. John, proper, 450 miles long, takes its rise from sources in the province of Quebec and the state of Maine, at a reputed maximum altitude of 2,159 feet above sea level. Entering New Brunswick at the confluence of the St. Francis, a little below the borders of Quebec, it continues to be the international boundary almost to Grand Falls, and after flowing through the province for nearly 300 miles (by way of

the counties of Madawaska, Victoria, Carleton, York, Sunbury, King's and Queen's) discharges into the Bay of Fundy at St. John. Many tributaries, some being of considerable magnitude, are received by the main stream. Among them are the St. Francis, Madawaska, Green River, Grand River, Salmon River, Nackawick, Eel River, Keswick, Nashwaak, Oromocto, Jemseg, (Grand Lake), Washademoak, Belleisle and Kennebecasis. Except the last five, which are slightly tidal for some distance, they are fresh water streams.

The total basin from source to mouth is computed to be 26,000 square miles, an area almost equal to the whole of New Brunswick, but as a part of the watershed lies outside, only a little more than one-half the province is drained by the river. The St. John is considered navigable for vessels 15 feet in draught for a distance of more than 50 miles from the mouth, but no positive information on this point has yet been obtained. About 8 feet at low water can be carried to Fredericton, 84 miles from the sea, and 6 miles below the head of tide at Springhill. Three natural features of the river are remarkable ; viz.:—

The tidal falls ; Grand falls, and the annual floods.

Although in summer the fresh water stream between Woodstock and Fredericton is in places 400 to 1,000 feet wide, expanding at the latter place after reaching the tidal level to half a mile in breadth ; yet the actual mouth of the river, a rocky gorge 400 yards long, immediately at the head of St. John Harbour, measures but as many feet across at high water. Here at low water, the level of the river is from 11 to 25 feet above the sea, and as the ordinary tides flow from 23 to 27 feet, the sea level at high water is from 8 to 13 feet higher than the waters of the river. Thus there are two falls at every tide ; viz.: one outward and one inward, and vessels can only pass when the waters of the ocean and the river are on a level. This occurs only for a space of about 10 minutes during each ebb and flow of the tide ; at all other times it is either impassable or extremely dangerous. (Admiralty Sailing Directions).

At Grand Falls, 223 miles from the sea, the whole volume of the river plunges over an almost perpendicular face of limestone 60 feet high, into a deep ravine 250 feet across, somewhat similar to the narrow pass at St. John. Flanked for nearly a mile by lofty rugged cliffs, the confined current dashes from the foot of the falls with excessive strength, mining deep pot-holes in the rocky bottom of the channel in the course of a further descent, estimated to be slightly less than the first. In the Harbour of St. John, ordinary spring tides are considered to rise 25½ feet. At the wharfs of the river steamers, a mile above the falls, while summer range is about 3 feet, the highest flood mark is given as 17 feet above extreme low water. At Oromocto, 73 miles from the sea where the tidal range is from 10 to 12 inches, the flood of 1887 reached a bridge 20 feet above low water. At and over, 200 miles from the sea, floods attain an elevation of more than 27 feet above summer level. By contrast the Tobique and St. Francis swell 9 and 6 feet respectively. After the first spate, due to the melting of the snow in the catchment basins of the Kennebacasis, Belleisle bay, and Washademoak, a secondary flood occurs, caused by the back water of the main river, which is fed from sources further north, and consequently later in thawing.

The harbour of St. John is open all the year around, but the river is ice-bound from November to April, an average period of 144 days. The water usually begins to rise in April, reaching flood pitch early in May, and maintaining a high level for two or three weeks. By the middle or end of July, the water has fallen to summer level, a stage lasting, with some variations dependent upon the rain fall, for about 60 or 70 days.

In addition to a little coal, a considerable quantity of cord-wood, and the ordinary food supplies yielded by the farms of a lengthly fertile valley, the trade of the river comprehends an abundance of valuable timber, fluctuating each season in amount, but generally at least equal to 135 million superficial feet annually. Most

of the logs are floated loose down the tributaries and upper river to Fredericton, some being manufactured there and shipped coastwise or to the United States. The remainder, or major part, is towed from the provincial capital to St. John in rafts, giving employment to a fleet of tugs.

For the purpose of works, three divisions may be made of the river.

1. Tidal Navigation, for steamers and sailing vessels between St. John and Fredericton, 84 miles, requiring 11 feet at low water. Principal obstruction : the Oromocto shoals, about 1½ miles ; the middle ground above Oromocto island, about 1 mile ; and the shoals abreast Fredericton, rather more than ½ mile in length. The last are now dredged, but the other obstacles remain.

2. Inland Navigation, from Fredericton to Woodstock, a distance of about 65 miles, requiring 3½ feet at low water. The obstacles to inland navigation, besides boulders in some places, and perhaps bed rock at Meductic, are shoals of material more or less coarse, according to the strength of the current, varying in composition from sandy gravel to stones. The chief bars are at Springhill and Bear island ; while Knapp's, Perley's, Coac, Nackawick, Belvisor, Moore's, Bett's, Dibblee's, and Bedell's Bars with Meductic rapids, constitute lesser obstructions, according to present information. Dividing above Springhill into two main channels, and from a general width of 350 yards opening to a stretch of 1½ miles between banks with a water-way increased by at least one-third, the river becomes dotted with eyots and shallows, two gravel shoals, known as the Russel and Chapel Bars, together, about ¼ mile in length, compose the obstacle at Springhill. At Bear Island, 25 miles above Fredericton, in consequence of another division of the river into three channels aggregating 600 yards in breadth, a shoal of gravel and stones 1 mile long, giving 21 inches at low water, has been formed. Besides dredging, a long training dyke will be necessary for the maintenance of this channel. After reuniting below the island, the width of water-way in single channel is only 250 yards.

3. The Upper river, including with the tributaries all that part above Woodstock. This division is now used for the passage of timber only. On some of the tributaries beyond the reach of railways, supplies for the lumber camps are transported in tow boats, for which channels are required to be made and tow-paths provided.

Tidal Navigation.

The tidal compartment of the River St. John comprehends, besides the main stream navigable by steamers which run daily between St. John and Fredericton, a distance of 84 miles, four tidal arms, all navigated by wood boats and regular passenger steamers, the extent of the whole tidal navigation being as follows :—

Main River St. John	84 miles long.
Kennebecasis	24 "
Belleisle Bay	12 "
Washademoak Lake	27 "
Grand Lake and Salmon River	35 "
Total extent	182 miles.

For the convenience of the steamers and other craft navigating the main river and its branches, the provincial government has erected a number of wharfs, towards which the department has made contributions amounting to one-half the certified cost.

During the year 1901-02, assistance was given to a number of these wharfs, $3,000 being available for that purpose; while in the fiscal year 1902-03, $4,813.14 was applied to the same object.

A contract was signed on January 22, 1903, for the construction at Oromocto of a public wharf, which was begun and completed in 1903-04. The new wharf is of round timber cribwork, 300 feet in total length, with an approach 20 feet wide on top, battered at the rate of 1 to 1 to the upper side, and sheathed. The pierhead is 70 by 35 feet on top. The work is filled with ballast. A road 130 feet long, was made from the old wharf to the new.

The expenditure during the fiscal year 1903-04 was $6,558.75.

Inland Navigation.

Between Fredericton and Woodstock during the fiscal year 1903-04, rocks were removed from the shore at ten landing places used by the steamer 'Aberdeen,' viz.:— Burden's, Hazelton's, School-house, Kirke's, Moore's, Grosvenor, Hamilton's, Oldham's Eddy, Meducric, Woodstock.

Besides some earth, 94 cubic yards of large stone and 299 cubic yards of small stone were removed.

The expenditure amounted to $394.04.

Tobique river, Victoria county. Between Plaster Rocks and the Forks, a distance of 34 miles, channels 50 feet wide and 2 feet deep, aggregating almost 2 miles in length, were made for the passage of tow-boats through 22 shoals, viz.:— Nicholas, Cumliffe, Loup Cervier, Long Island, Caribou, Diamond Island, Robinson, Gaunce's, Blue's Island, Harris Island, Knowlton, Everett, Cameron, Gilbert Blue, Blue Mountain Brook, Jenkins, Haley Brook, Swift Island, Mink Cove Island, Barker.

Tow-paths were also cut for 120 rods, while stumps and trees along the bank were cut and removed wherever necessary.

The expenditure amounted to $857.

Little Tobique river, Victoria county. On the little Tobique, improvements to facilitate the passage of tow-boats were made by clearing channels through seven bars, varrying from 100 to 300 feet in length. These channels were made 25 feet wide and 2 feet deep below low water level. Five tow-paths, one-fourth of a mile in length and 16 feet wide, were also cut, and large trees, constituting obstructions to towing, were removed by blasting. The improvements extended from Tobique Forks to Red Brook, a distance of about 26 miles.

The expenditure amounted to $399.

Serpentine River, Victoria county. On the Serpentine, 13 rocks were blasted from McCarthy's Falls, and as many more between that and Little Falls. Thirty-five boulders, equal to 60 cubic yards, were also removed by blasting between the head of Dead Water and the dam at the foot of Serpentine lake, a distance of 10 miles. A pier at Serpentine Falls, 20 feet long and 14 feet high, was sheathed with 6-inch birch. A new pier, 64 feet long, 50 feet wide and 9 feet high, was built at the islands at the foot of the falls ; and another, 40 feet long, 20 feet wide and 8 feet high, partly ballasted, was built at the head of Dead Water, 2 miles above the falls.

Main River below Aroostock, Victoria county. In the main River St. John, near the month of the Tobique, rocks which were impediments to the passage of logs, were blasted. From one rock a portion, 60 feet long, 22 feet wide and 2 feet high; from another a portion 90 feet long, 45 feet wide and 7 feet high; and from a third a part 30 feet long, 24 feet wide and 2 feet high, were removed. A tow-path 650 feet long and 10 feet wide, was also cut on the east side of the river below the Tobique rocks. In this a culvert of cribwork was built with a 10-foot opening.

The expenditure amounted to $299.82.

Main River, Victoria county. Between the mouth of Salmon river and the Aroostock, 33 cubic yards of rock were removed by blasting at Baker's Reef, and 147 cubic yards at Little river.

The expenditure amounted to $200.

Grand Falls to Salmon River, Victoria county. Between these points, fifteen rocks, containing 148 cubic yards, were removed by blasting.

The expenditure amounted to $200.

Grand Falls, Victoria county. At Grand Falls, the whole of the River St. John takes a sudden plunge of 80 feet into a narrow gorge. At the foot of the falls, an eddy, which retains a great deal of the timber passing over, is formed by a projecting point of rock. To reduce the eddy, a considerable part of the point has been removed. In June and July, the blasting covered an area of 100 feet long and 80 feet in extreme width at the base, the average depth of rock being 12 feet. In August and September, 109 cubic yards of rock were blasted from the same place.

The expenditure amounted to $900.

In former times, a jetty had been constructed above the falls to deflect the current to the east side, and to throw the logs clear of the eddy below. A work of similar character was built during the fiscal year 1903-04, a little nearer the falls. This cribwork pier is 208 feet long on the centre line, is 30 feet wide on top and stands 4 feet above flood level.

The expenditure on this work amounted to $4,710.07, making a total during the year at Grand Falls of $5,610.07.

Grand River, Madawaska county. Improvements were made on this river for a distance of fifteen miles. The work consisted in removing an old dam two miles from the mouth, in cutting tow-paths 12 feet wide and in clearing the river from obstructions.

The expenditure amounted to $250.

Green River, Madawaska county. On the Little Forks of Green river, 30 cubic yards of rock were removed by blasting, and a cribwork pier, 50 feet long, 15 feet wide and 6 feet high, was built at the second falls of Little Forks about two miles from the mouth. At this point, fourteen rocks, containing 158 cubic yards, were removed by blasting, and a tow-path, 748 feet long and 20 feet wide, was cut round the falls.

The expenditure amounted to $250.

Iroquois River, Madawaska county. The Iroquois discharges into the St. John two miles below the town of Edmunston. At the falls of the Iroquois, fifteen miles above the mouth, the improvements made during the year consisted in building a dam, 68 feet long and 4½ feet high; a pier, 16 feet high and 11 feet wide; and another pier, 60 feet long, 7 feet high and 5 feet wide, all of round logs ballasted with stone. For the passage of timber a sluice 85 feet long, 6 feet high and 10 feet wide, was also made.

The expenditure amounted to $275.76.

Edmunston, Madawaska county. In the town of Edmunston for protection from the effect of the floods occasionally caused by the back water of the St. John, a cribwork dyke, 413 feet long, 15 to 16 feet high, 14 feet wide at the bottom and 9 feet at the top, was built and ballasted.

The expenditure amounted to $4,909.81.

St. Francis, Madawaska county. On the St. Francis, channels 15 feet wide and 2 feet deep, were excavated through the following shoals :—

Grew Bar, 175 feet long; Hab's Bar, 330 feet long and two at Jones' Bar, 330 feet long.

At Cross Lake Rapids, a channel, 300 feet long, 15 feet wide and 2 feet deep, was made by the removal of rocks. A tow-path 16 feet wide, was cut round Glacier lake, a distance of five miles.

The expenditure amounted to $300.19.

Exclusive of the cost of dredging, the total expenditure on the River St. John to June 30, 1903, amounted to $152,545.34.

The whole expenditure for the fiscal year 1903-04, including $794.31 for the pay and expenses of the permanent foreman of the upper river was $16,788.94.

SHIPPEGAN.

Shippegan Gully, Gloucester county, a passage between Shippegan island and the mainland, is situated on the western side of the Gulf of St. Lawrence, and is distant 3 miles south-east of Shippegan village, the terminus of the Caraquet Railway, and 65 miles east of Bathurst, the shire town of the county.

To improve the entrance to the harbour, the department in 1875 commenced the construction of a breakwater on the eastern side of the gully, and a dam 890 feet long to close what is known as the eastern gully, distant three-fifths of a mile eastward of the main gully.

From 1875 to 1890, the works were confined to the eastern side of the entrance, and at the latter date consisted principally of a pier or breakwater at the point, and a breastwork along the northern face of the beach, the whole having a length of 1,200 feet, one-third of which was constructed of cribwork and the remainder of brush and pile works.

In 1880-81 and in 1883, the dam was repaired, raised and strengthened, and during the latter year the pier was also repaired and extended 120 feet.

General repairs were again made during 1883-84 and 1886-87. In 1888-89 the work was further extended 50 feet by the construction of an additional block at the outer end.

During 1890-92 a contract was entered into for the construction of a breakwater 1,194 feet long, off from the western beach, consisting of a pile work filled with brush and stone; 137 feet of the outer portion of the eastern work was rebuilt at the same time.

In 1892-93 and 1893-94, repairs were continued, and in 1897-98 plans were prepared and general repairs to all the works undertaken. These were continued until the winter of the following year, during which time the dam was raised 3 feet over a distance of 452 feet and extended westerly 185 feet. An apron of brush and stone 375 feet long was also built on the south side of the dam, and on the northern side 10 rows of stakes or hand piles were driven, forming groynes for the purpose of arresting the drift of seaweed and sand, thus stopping the leaks, and at the same time protecting and strengthening the dam. Between the dam and Fruing & Co.'s fishing establishment, 4 hurdles, 155 feet in total length, 2 pieces of brush, stake and gravel work, one 12 x 60 x 3 feet, the other 13 x 46 x 4 feet, were constructed in order to preserve the beaches and confine the roadway to one course. Eastward of Fruing & Co.'s establishment, a pile-bent structure, 120 feet long, filled in with brush and stone, and a further length of 119 feet of brush and stone alone was built, to close an opening in the harbour side of the beach. Near the inner end of the east pier, 63 feet of pile-bent work was constructed, and between this work and the pierhead, one branch of 22 feet, one of 62 feet and another of 70 feet, were closed with pile-work filled in with brush and stone. A gap of 90 feet in the pier-head was closed by the partial construction of a close-faced cribwork block and a pile structure, each 45 feet in length, and other minor repairs were made. On the west side of the gully, 62 piles were driven at the outer end of the breakwater, and 180 feet refilled with brush and stone. Along the west beach, a breastwork 1,669 feet long of stakes, piles, brush and gravel, was constructed to close runnels and raise the crest of the beach, and an opening of 43 feet between sand dunes was closed with stakes, brush and gravel.

During 1899-1900, the gap of 90 feet in the east work was completed; 455 feet were reconstructed with fascines, brush and stones. One pile groyne, 26 feet long, was built on the harbour side of the work, and another, 220 feet long, on the seaward side, with brush, stakes and gravel. The dam was raised 3 feet with brush and stone for a distance of 495 feet. An apron 476 feet long and 8 feet wide was placed along the southern side, and an extension of 17 feet was made to the eastern end, from

which latter point, a groyne, 180 feet long, of stakes, brush and stone, was constructed nearly at right angles to the dam.

In 1900-01, a new pile pier-head, 44 x 34 feet, was built at the outer end of the eastern work, and breastworks, 200 feet and 92 feet long respectively, were built on the outer and inner sides of the breastwork, built the previous year on the west beach. One hundred and ninety feet of the breakwater was sheathed horizontally on the harbour side between high and low water, the interior of the work was strengthened by braces and an extension of 100 feet was made to the inner end.

During 1901-02, on the east side, the outer block of the breakwater was ballasted, one pile-groyne 48 feet long was constructed and another partially so. The work to the east of Fruing & Co.'s was sheathed with 3-inch deals, and between this and the dam, a distance of 1,826 feet, a beach protection work was built. The dam was raised 3½ feet over a distance of 350 feet. On the west side the outer 130 feet of the breakwater was strengthened with braces, piles were driven at its outer end, horizontal sheathing was placed for a further distance of 130 feet on its eastern side, and the outer 30 feet was partially filled with brush and stone. Also, on the harbour side of the breakwater, a groyne 88 feet long was constructed, and an extension of 175 feet was made to the inner end by driving close-piles, backed with brush and stone.

During 1902-03, on the east side, a gap 121 feet long, immediately to the east of Fruing & Co.'s was closed with a work built of piles, brush and stone. Two new groynes, each 40 feet long, were built, and two increased in height. On the west side, the breastwork of stakes, brush and gravel, was extended westerly 1,200 feet, and slight repairs were made on the western breakwater.

During the fiscal year 1903-04 : On the east side, two groynes, one 40 and the other 29 feet long, were built on the harbour side of the work, with piles faced with 6-inch hardwood ; two groynes, whose outer ends had been raised by the ice, were shortened 12 and 8 feet respectively; 500 feet of light breastwork, formed of posts in two rows 8 inches apart, filled between with brush, was built on the seaward side, to cause an accumulation of sand; 37 feet of the same construction was built as an extension to the work on the harbour side to the east of Fruing & Co.'s establishment, and the cross-ties of the second block from the end of the east breakwater were levelled preparatory to being covered with plank.

On the west side, 875 loads of sand and gravel were carted to fill a low spot beside the breastwork on the west beach, where the tide was working through. The ends of three groynes which had been raised by the ice, were cut off for 30, 10 and 15 feet respectively. Fifty pieces of new plank were laid on the western breakwater. Its outer corners were strengthened by the addition of 6 iron straps and 60 cubic yards of brush and 40 of stone were placed on its outer end.

A survey of the entrance and channel within the gully has lately been made, by which it is found that the depth at the entrance is gradually increasing. At the commencement of the works the depth was only 3¼ feet, in 1898 it was nearly 6½ feet, whereas at the present time about 8 feet is found at low water spring tides.

The expenditure for the year 1903-04 amounted to $1,097.85.

The total expenditure to June 30, 1904, was $88,054.29.

TRACADIE.

Tracadie, Gloucester county, is situated on the Gulf of St. Lawrence, about midway between Shippegan Gully and the entrance to Miramichi bay. Its harbour is one of the several large lagoons on the east coast of New Brunswick, separated from the sea by long sandy beaches and entered only by narrow channels termed gullies. The harbour of Tracadie is entered from the Gulf of St. Lawrence by what is known as the 'north' and 'south' gullies.

The harbour is some six miles in length by a quarter to one mile or more in width, but except in the river channels (north and south Tracadie rivers) and in the channels entering from the gullies, it is quite shoal, being almost dry at low water spring tides.

In 1894, in order to provide shipping facilities for the district, which is a large and populous one, containing upwards of 2,000 inhabitants, the department constructed a wharf 1,430 feet long and 25 feet wide, consisting of blocks and spans as follows :— A shore block or approach 250 feet long, twenty-eight blocks 20 x 25 feet, a pierhead or outer block 40 x 25 feet, and twenty-nine spans or openings of 20 feet. The work was constructed of open cribwork of round timber and the top covered with 3-inch plank.

During 1900-01 a cribwork block 55 feet long and 27 feet wide on top, lying immediately beyond the outer end of the departmental work, was repaired and connected with the main structure which was also repaired.

During the year 1901-02, the laying of diagonal covering for a width of 10 feet was continued and completed over a distance of 1,318 feet.

During the fiscal year 1903-04, repairs were again necessary, as eight of the blocks had parted above the ballast floor during an unusually high tide, being raised from 3 inches to 1 foot. From seven of these the ballast was removed and they were set back into place and secured with iron rods hooked around the timbers below the ballast floor and bolted to the timbers above. The eighth block which was only slightly displaced was merely secured with rods.

In addition 200 cubic yards of ballast was placed in the work and twenty-four fenders, 425 lineal feet of cap timbers, 65 lineal feet of 3-inch covering 25 feet wide, and 19 lineal feet of 2-inch covering 10 feet wide, were renewed.

The expenditure for the fiscal year 1903-04, was $844.66.

The total expenditure to June 30, 1904, was $7,163.04.

TYNEMOUTH CREEK.

Tynemouth creek, St. John county, twenty-one miles east of the city of St. John, is one of the several small havens, dry at low water, found on both shores of the Bay of Fundy which are only useful on account of the high range of tide. Tides rise here about 28 feet. Inside a beach of gravel and stones, is a tidal basin, accessible to small vessels at high water by an opening at the east end of the beach.

In 1874-75, the department built a substantial cribwork pier on the rocky foreshore of the eastern cliff to prevent vessels from taking ground on that side.

In 1882-83, another work to maintain the channel was built on the point of the beach on the opposite side.

In 1894-95, a sum of $225 was applied in replacing some of the fenders and covering of the east pier and to removing part of the rocky ledge obstructing the channel.

In 1897-98, a sum of $510 was expended in removing 813 cubic yards of shingle from a shoal obstructing the entrance, and in effecting minor repairs to the west pier.

The harbour is constituted by a long beach stretching from the western side of the inlet. By heavy gales, the crest of the beach was cut down almost 5 feet for a length of 300 feet.

In 1900-01, to prevent this beach from being lowered and the harbour from being endangered, a protection work of piles and planks from which three groynes 41 feet long, projected, was built for a length of 345 feet.

At the cribwork groyne of the west pier, a block 68 feet long over all, and 16 feet wide, repais were made for a length of 52 feet ; new ballast floors were inserted ; new ballast was placed in the work; and the top was given new stringers, and in great part, new covering, besides ten new fenders. The remainder of the covering of the west pier was also patched in places.

At the east pier, chocks were inserted between started face-timbers to retain the ballast; 13 new fenders were placed and the break was repaired.

During the fiscal year 1903-04, the main body of the west pier was raised 2 feet for a length of 116 feet; was ballasted for a depth of 5 feet, and was newly covered. The spur of the west pier was also raised two tiers, ballasted and covered; while the inner end was levelled up and raised one tier. Three new fenders were added to the east pier, and loose fenders were bolted. The road approaching this pier was also repaired for a distance of about 50 yards. The shoal obstructing the entrance to this harbour was removed, the channel being made 45 feet wider and 2 feet deeper than before by removing the bar for a maximum length of about 300 feet.

The total expenditure up to June 30, 1903, amounted to $8,241.57.

The expenditure for the fiscal year 1903-04 was $1,001.

UPPER SALMON RIVER.

Upper Salmon River, otherwise called Alma, the terminus of the Albert Southern Railway, is situated in the county of Albert, 5 miles from Rocher Bay, and 2 miles from Herring Cove. From Alma, deals are either sent in coasting vessels to St. John for shipment, or are transported directly to sea-going vessels lying at the anchorage off Grindstone island, or in the roadstead off Herring Cove. For protection of the coasters lying inside the river-mouth at the private wharfs, which afford 4 or 5 berths, the department built in 1883-4 a breakwater which was extended to a total length of 420 feet. By position the work lies across the path of the littoral drift. In consequence, the foreshore has advanced nearly 500 feet on the weather side, and the drift, having fully charged the outside of the breakwater, is now working round the end. Accordingly, inside the point of the breakwater a bar 11 feet in height was formed which extended nearly across the mouth of the river. By means of a temporary groyne, inducing scour, the channel, which had become cantracted to a width of only 34 feet, was increased during the months of April and May, 1900, to 125 feet in breadth, but the shoal was soon formed again.

On August 6, 1902, a contract was let for the construction of an extension 104 feet in mean length and 30 feet wide on top, of close face cribwork, with a sloping face on the weather side of the breakwater. By the end of the year excavation for the foundation had been made and the timber work begun.

By the end of the year 1903-04, the work had been brought up to the 23rd tier or 4 feet below the level of the finished top.

The total expenditure to June 30, 1903, amounted to $11,384.70.

The expenditure for the fiscal year 1903-04 was $3,455.

WILSON'S BEACH.

At Wilson's Beach, a fishing settlement in a slight indentation of the coast on the west side of Campobello, an island in the Bay of Fundy forming part of the county of Charlotte, a breakwater 373 feet in length was built to shelter the cove by the joint contributions of the federal and local governments between the years 1874 and 1878. The outer arm of the breakwater having become dilapidated, and the cove having been silted up, preparations were made in 1899-1900 to restore the inner end 284 feet in length, and the repairs were nearly completed in the following year, 1900-01. A quantity of materials was also procured for the construction in deeper water of the dismantled outer end.

In 1901-02, the repairs to the inner end were completed. Crib No. 1 of the part to be reconstructed, 80 feet in mean length and 36 feet wide, consisting principally of hardwood timber, was built, placed in position and ballasted. Crib No. 2, 74 x 40 made of similar materials, was also begun and at the end of June had been built to a height of 8 tiers. A quantity of timber was also delivered.

In the fiscal year 1902-03, crib No. 1 was increased 130 feet in leng outside and raised at the inner end to the 26th, and at the outer to the Crib No. 2 was brought up to the 23rd tier.

In 1903-04, the superstructure of crib No. 1 was completed ; while t crib No. 2 was brought up to the full height with the exception of the ber quired to be left for making the connection with crib No. 3, which was b brought up to the 10th tier in height.

The total expenditure to June, 30, 1903, amounted to $80,678.69.

The expenditure for the fiscal year 1903-04 was $8,055.15.

PROVINCE OF QUEBEC.

AMHERST.

Amherst village is situated at the eastern end of Amherst island, o Magdalen islands, in the Gulf of St. Lawrence, and forms part of the electo of Gaspé.

Amherst is a port of considerable importance. Two steamers plyin Pictou, Souris and the Magdalen islands call twice every week at Amherst lan

The landing pier commenced at Point Shea in May, 1900, and built t of 188 feet during the fiscal year 1901-02, was extended 250 feet during the 1903-04, making it together with the 50 feet built from the outer face of th to the side of the cliff a total length of 488 feet, with an average width o and an average height of 25 feet. The outer end of the wharf stands in low water spring tides.

The whole is built of cross-face cribwork protected every 8 feet by fenders. For the whole of the superstructure from 3 feet below low water m face-timbers, 12 x 12 inches were put in the work.

The cribwork substructure settled down from 4 to 6 feet in sand and cla outside or easterly side a quantity of ballast stones had to be placed so as to p undertow from undermining the work.

The approach of 625 feet in length built in May and June, 1901 being too low and too narrow, and besides having been partly carried away had to widened to an average of 26 feet and raised to 8 feet above low water mar being levelled with sand and gravel.

The expenditure during the last fiscal year is $4,476.32.

ANSE À BEAUFILS.

Anse à Beaufils, in the county of Gaspé, is on the Gulf of St. Lawrence south of Percé.

The sum of $496.80 was expended towards the removal of rocks from th

ANSE AUX GASCONS.

Anse aux Gascons, is situated on the north shore of Baie des Chaleu county of Bonaventure.

During the year 1903-04 the sum of $2,765.50 was expended for the co of an approach to the breakwater at this place.

ANSE DU CAP.

During the last fiscal year the sum of $100 was expended towards the r rocks from the harbour of Anse du Cap, in the county of Gaspé.

ANSE ST. JEAN.

Anse St. Jean, is situated on the north shore of the River Saguenay, twenty-five miles above its mouth.

The public landing pier at this place was commenced by the local government in 1876, and continued by federal government in the years 1879-80, 1880-81.

Total expenditure since confederation, $4,752.63.

Paid by the local government and municipality, $1,700.

In 1881-82, the upper part of the pier was completed at the expense of $1,091.72, the pier is 366 feet in length 26 feet in breadth up to the head which is 50 by 40 feet and 33 feet in height. At low water spring tides there is a depth of 7½ feet at the outer end of the pier.

1884-85, the pier was repaired. Expenditures, $94.45.

During the year 1886-87, the sum of $865.28 was expended on the construction of a movable slip, building an open shed 40 by 28 feet and renewing part of the flooring.

In 1890-91, the portion of the wharf which settled in the spring of 1889, was raised from 2½ to 3 feet over a length of 135 feet and the flooring renewed, a quantity of stone was placed in the eastern portion of the wharf and the shed was repaired.

Expenditure, $999.42.

During the years 1892 up to 1897, repairs were made, the flooring completed and the eastern face of the cribwork was sheathed with an expenditure of $1,963.75.

During the fiscal year 1899, a landing slip was built on the eastern side of the pier, the slip is 75 feet long at the base, 25 feet on the top and 14 feet wide, filled with stone ballast, the planking of the pier was renewed on a length of 200 feet at a cost of $1,000.27.

In 1899-1900, 50 feet of the outer end was sheathed, and 200 feet of flooring was renewed with 3-inch spruce and the shed was painted.

Expenditure, $501.

During the year 1902-03,the work done consisted of general repairs to the flooring, a new slip, sheathing and repairs to the shed.

Amount of expenditure, $657.91.

During the fiscal year of 1903-04, a pier 24 feet in length by 50 feet in width and 34 feet high, was sunk in 13 feet depth at low water spring tides. The pier is built of round logs open-faced, with fenders of 8 by 10 inches every 8 feet and sheathed on the two outer corners with 8-inch timber.

The stringers 10 by 11 inches, are ready to receive the flooring.

Spring tides rise 17 feet; neaps, 10 feet.

Amount expended is $3,048.04.

Total amount expended to July 1, 1904, was $17,190.02.

BAIE ST. PAUL.

Baie St. Paul, is situated on the north shore of the St. Lawrence, in the county of Charlevoix, sixty miles below Quebec.

During the fiscal year 1903-04, extensive repairs were made to the west side of the wharf where the face timber had been broken by ice during a heavy storm. In the spring of 1903, the damage extended over a length of 125 feet and 12 feet high.

A number of large boulders were also removed from the channel leading to the wharf.

The expenditure during the fiscal year, 1903-04, was $3,279.66.

BELŒIL.

Belœil is an incorporated village in Verchères county, on the north side of the Richelieu river, and a station on the Grand Trunk Railway, 21 miles north-east of

Montreal. It has an express office, one store, two hotels, one saw mill and the the Hamilton Powder Company. Population, four hundred. The Richel leaves Lake Champlain at its northern extremity, and after a course of 80 mil the St. Lawrence at Sorel. It is broader and more rapid in the former th latter part of its course. The Richelieu forms an important part of the n between the St. Lawrence and the Hudson river.

South of the Grand Trunk Railway bridge, which crosses the river at B government built a number of piers and booms on both sides of the channel tate the passage of steamers and barges coming down the rapid current of and going through the narrow passage of the draw-bridge, and to prevent t being carried away into shallow water. There are eight piers, or four on each channel, distant from 80 to 100 feet from one another. From 1885 until 1 slight repairs were made to the booms at a cost of $353.43. In 1890-91 thr piers were rebuilt from the water line and some slight repairs were made to t at a cost of $1,500.35. In 1891-92, two other piers were rebuilt from the w at a cost of $1,193.38. In 1895-96 some slight repairs were made to the bo cost of $144.79.

In 1896-97, it was found that the guide piers on the west side of the ri many years ago, were in such a bad condition, that they could not be properly and an entirely new line of guide works was adopted. It was decided to bui crib-work wall from the Grand Trunk Railway pile abutment upwards, follo line of a 15-degree curve for a distance of 337 feet; to remove the four old booms, and to dredge a wider channel for the free passage of boats.

The work carried out by days' labour, was not completed on June 30, 19

The expenditure during that fiscal year was $1,261.50.

BERGERONNE'S WHARF.

Bergeronnes, Saguenay county, is on the north shore of the River St. L 18 miles below Tadousac.

This place contains, one church, post office, telegraph office, four saw- two cheese factories.

During the year 1903-04, a landing wharf was commenced in the River Bergeronnes; it is to be 20 by 30 feet, and 17 feet high, built of open face ro ber cribwork and ballasted with stone.

Spring tides rise 16 feet; neaps, 9 feet 6 inches.

The amount expended was $239.30.

BERTHIER.

The village of Berthier, in the county of Montmagny, is on the south the River St. Lawrence, 29 miles below Quebec.

A large traffic in farm produce is made through the coasting steamer 'Cl which plies daily between Quebec and Berthier. Spring tides rise 21 feet; feet.

During the fiscal year ended June 30, 1904, the sum of $447.96 was exp sheathing the east side of the shore end of the wharf, on a surface of 3,270 with tamarack 3 inches thick ; the top planking was also repaired.

BOIS BRULÉ.

Bois Brûlé, county of Gaspé, is a small fishing cove some five miles below of Douglastown.

As the beach for the landing of the boats was wearing away, a training pier was decided upon. The pier is to be 90 feet long, 22 x 22 feet wide and 12 feet high. Sixty feet of the outer end of the pier has been built.

The expenditure at the end of the last fiscal year was $1,704.24.

BONAVENTURE EAST.

Bonaventure East, is in the county of Bonaventure. During the year 1903-04 a contract was let to build a breakwater at this place for the sum of $15,690. It is to be 700 feet long by 20 feet wide.

The work done at the end of the fiscal year 1903-04 amounted to $5,000.03, and was not completed.

BON DÉSIR.

Bon Désir, in the municipality of Les Bergeronnes, is situated on the north shore of the St. Lawrence, at five miles east of Les Bergeronnes village.

The Bay of Bon Désir is much frequented by schooners loading cordwood and timber, the entrance to the bay is obstructed by boulders, some of the most dangerous of which were removed.

The amount expended was $191.

CACOUNA.

Cacouna, one of the best known and most frequented summer resorts in Canada, is situated on the south shore of the St. Lawrence, in the county of Temiscouata, 120 miles below Quebec.

Spring tides rise 20 feet ; neaps, 12 feet.

During the fiscal year ended June 30, 1904, an addition to the wharf was built ; the crib is close-faced, filled with stone ballast, 75 feet in length, 30 feet wide, on a mean height of 19 feet. The work was done by day labour, during the months of October and November, at a cost of $2,298.35.

CAP DE LA MADALEINE.

Fifty dollars were expended towards the removal of some 60 cubic yards of shale along the beach on the west of the outlet of the Madeleine river, county of Gaspé.

CAP DES ROSIERS.

The sum of $101.19 was expended towards the removal of 20 cubic yards of solid rock and 100 cubic yards of large boulders, so as to allow fishing crafts to come ashore in safety, at Cap des Rosiers, county of Gaspé.

CAP SANTÉ.

Cap Santé, the chief town of the county of Portneuf, is situated on the north shore of the St. Lawrence, five miles below Portneuf and thirty-one miles above Quebec. Spring tides rise 14½ feet, neap tides, 8½ feet.

During the fiscal year 1903-04, minor repairs to the amount of $16.20, were made to the wharf at this place.

CHAMBORD.

Chambord, in the county of Chicoutimi, is situated on the south-east side of Lake St. John.

Chambord is the junction for the Quebec and Lake St. John Railway, of the Roberval and Chicoutimi branches.

During the fiscal year, a certain quantity of timber was purchased in vie construction of a wharf at this place.

The amount expended was $1,541.67.

CHAMPLAIN.

Champlain, a post village in Champlain county, situated on the north the River St. Lawrence, on the Canadian Pacific Railway, 15 miles east Rivers. It contains a Roman Catholic church, 2 telegraph offices, 9 stores, 1 saw-mill, 1 butter factory, &c. Distance from station to village 1½ miles. tion of village, census of 1890, 810; of parish, 1,180.

With a view of affording much needed facilities, by water-way, to the tra surrounding localities, it was decided to build a public wharf at that place.

In May, 1904, the old wharf of Mr. H. Arcand, together with a piece about ½ arpent in area, on the shore of the river, and a right of way from th road to the wharf, was purchased for the sum of $1,000. On June 30, mater sisting in timber, lumber, stone, crushed stone, iron, cement, &c. had been for the sum of $4,628.07.

CHICOUTIMI.

The town of Chicoutimi, in the county of the same name, is situated on t shore of the Saguenay river, 71½ miles above Tadousac, at the head of na The Richelieu and Ontario Navigation Company's boats call two to six time at the Chicoutimi pier during the season of navigation, with passengers, fre mails.

At the mouth of the River Chicoutimi, about 1 mile above the pier, th extensive lumbering establishment belonging to the Messrs. Price Bros., wh large quantities of sawed lumber, laths and shingles, to Europe and elsewhere, vessels and large schooners which ascend the Saguenay to the town. Ther the Chicoutimi Pulp Company, which has two pulp mills of a capacity of 78 a year, the Chicoutimi Pulp Company loads every year an average of 20 ste

Construction.—The landing pier was commenced in 1873 by the St. I Tow Boat Company, and completed by the Dominion government to whom handed over in 1874, at a cost of $14,193.40. From 1874 to 1882 inclusively, i tended and improved at a total cost of $2,863.73. The pier was then 282 f and consisted of an approach 248 feet long and 30 feet wide, and of a head feet long and 127 feet wide forming two wings respectively, 70 feet and 27 f On the upper or 70 feet wing was a combined waiting room and an office 20 fee

The depth of water at the end of the pier which was originally 10 fee water spring tides, was then reduced to 7 feet by the accumulation of slabs dust from the mills at the mouth of the Chicoutimi river.

In 1883 the shore end portion of the approach on a length of 38 feet was ed in an embankment upon which the station and sheds of the Chicoutimi b the Quebec and Lake St. John Railway are now erected. The length of the was thereby reduced to 210 feet by filling in with slabs the whole space, 21 length, between the upper or 70 feet wing and the shore, and a storehouse 40 and 24 feet wide was erected on this extension at a total cost of $2,145.84. T was not however carried up to the level of the top of the pier until 1885, extension was floored in a manner similar to the rest of the work. A separ ing room was also erected on the lower or 27 foot wing.

The amount expended was $2,042.11.

In 1890, a cribwork retaining wall 14 feet wide was commenced along filling built in 1884, and the flooring was repaired where required at a tota $1,005.81.

In 1891, the cribwork retaining wall was completed, a shed 28 by 29 feet built at the southern end of the pier and the flooring was repaired at various places at a cost of $1,802.70.

In 1897 the pier was again widened by the addition of cribwork 30 feet wide along its lower or eastern face, from the lower or 27 foot wing to shore, a distance of 210 feet. The cribwork was fully ballasted and floored with 3-inch tamarack planks and twenty-five fenders were placed along its face.

The pier was also sheathed for a length of 50 feet along its northern face in order to complete the sheathing all round the work. The total expenditure incurred was $4,992.96.

As now completed the pier is 245 feet long and 130 feet wide. It is 29 feet high above the bottom of the river at its outer end, which stands in about 8 feet of water at low water spring tides.

Repairs.—In 1883 and 1884 minor repairs were effected to the flooring, &c., at an aggregate cost of $288.55.

In 1887 a slip was built at the outer end of the pier, the waiting room was painted and general repairs performed at a cost of $1,390.34.

In 1889 the flooring of the pier was almost entirely renewed and six fenders 14 inches square, were placed along its outer face, at a cost of $1,631.65.

In 1892 and 1893 the flooring of the pier was completely renewed on a length of 210 feet and a width of 110 feet, with red spruce planks 5 inches in thickness; the east side of the structure was raised 18 inches, the waiting room was painted both inside and outside, and two mooring posts were renewed, the expenditure incurred during the two years was $3,024.04.

In 1894, a sum of $1,999.60 was expended for the construction of a movable slip and the purchase of two crab winches to raise it. During the years 1895 and 1896, a portion of the outer face and the whole of the eastern face of the structure were resheathed with red spruce 6 inches in thickness, and a portion of the flooring not completed in 1893 was laid.

Expenditure during the two years, $3,991.88.

During the year 1898, a sum of $239.79 was expended on minor repairs to the flooring, sheds and waiting-room.

During the year 1899, a freight shed 60 by 30 feet was constructed on the south side of the pier for the storage of butter and cheese. Part of the top planking was renewed. The work was done by day labour at a cost of $1,499.27.

During the year 1900, the pier was raised 3 to 5 feet over the whole surface; stone ballast was placed in the outer end which was also sheathed with tamarack and covering renewed with 3-inch plank at a cost of $5,050.59.

During the year 1900-01, a new 3-inch tamarack floor was laid on a length of 210 feet, and a width of 45 feet.

The northern part of the wharf for a length of 145 feet was sheathed and the sheds were painted.

Expenditure, $1,012.12.

During the year 1901-02, the old buildings on the wharf were taken down and new ones erected, the new freight shed measures 60 by 30 feet, and the passengers' waiting-room is 25 by 25 feet. These two buildings are covered with galvanized iron and painted three coats inside and outside. On the north side of the wharf six fenders 11 by 11 inches were placed, and five snubbing posts were renewed.

Expenditure, $1,513.34.

During the year 1903-04, the sheathing on the two outer corners of the wharf was renewed with hardwood, new fenders put in at the head of the wharf, the flooring was repaired and a portion of the flooring on shore which had to be renewed was replaced with gravel, and other minor repairs were performed.

Amount expended, $1,045.03.

Total amount expended to July 1, 1904, $53,051.82.

Spring tides rise 17 feet, neaps 9 feet.

CLARK CITY (SEVEN ISLANDS).

Clark City is the name of a new settlement established on the western the bay of Seven Islands, in the county of Chicoutimi and Saguenay, on t shore of the River St. Lawrence, about 330 miles below Quebec.

In 1902, the North Shore Power, Railway and Navigation Company, large tracks of timber land and commenced the construction of extensive saw-mills on the Ste. Marguerite river which falls into the River St. Lawrenc distance to the west of the bay of Seven Islands.

The site of the mills is about nine miles inland from the St. Lawrenc facilitate the shipping of their products, the company built a railway from th to a point, on the western side of Seven Islands Bay, near its entrance int Lawrence, and called Pointe Noire, where the construction of a commodiou was also commenced.

The bay forms a large, deep and well sheltered natural harbour which quires wharf accommodation. In 1904, the department decided to construct t as a public work and to refund to the company for work performed thereon materials already delivered for its construction, and the company transferre department the site and right of way to the approaches of the structure.

The part constructed by the company consisted in the approach of stone a 546 feet long, 30 feet wide on top, with side sloping 1 in 1, and of an averag of 20 feet; a crib built of close-faced timber, 200 feet long, 30 feet wide an high, sunk in place and ballasted ; framed timber for another crib of the sam sions, but not built, for the whole of which the sum of $34,433.95 is to be pai

The materials delivered consisted in pine, spruce and cedar timbers, also tity of iron, for which the sum of $21,485.34 is to be paid. The constructi wharf is being continued by the company under the supervision of an engin the department and payments are made by the department on the production fied vouchers. When completed the wharf will be 1,100 feet long, comp approach of earth and stone 546 feet long as described above, timber cribwor wide on a length of 401 feet and a further length of 153 feet of cribwork 40 f the outer end will stand in a depth of 26 feet at low water spring tides whic feet.

The expenditure for the fiscal year 1903-04 was $25,009.06.

CLORYDORMES.

The sum of $187.15 was expended towards the removal of loose and soli Petite Anse and $190.81 were spent at Little Clorydormes bay, county of remove large boulders that were in the way of fishing boats. Total, $267.21.

COTEAU DU LAC.

The village of Coteau du Lac, in the county of Soulanges, is situate north shore of the St. Lawrence, thirty-six miles above Montreal.

Construction.—In 1888, the construction of a landing pier was commen was completed in 1889 at a cost of $6,918.71. It consists of a head block cribwork, 101 feet long and 21 feet wide, with a cribwork extension, 40 f and 47 feet wide, built along the middle of its inner face, and a block a approach 75 feet long and 26 wide. The outer face of the head block is 15 above the bottom of the river and stands in 10 feet of water at ordinary lo Across the inner end of the extension to the head block, is built a freight sh full width of the extension and 20 feet long, with a passageway for vehicle neath.

Repairs.—During the year 1894-5, sundry repairs were effected to the str a cost of $249.99. In 1896-97, most of the floor stringers and the whole floori

pier, which were decayed, were removed, new floor stringers were put in, the whole structure was refloored with 4-inch hemlock planks at a cost of $694.58.

In 1897-8, sundry repairs were made to the corner sheathing, capping, &c., at a cost of $200.41.

In 1903-04, the head block being decayed and dilapidated was removed to low water level and rebuilt with close-faced 12 by 12 inch timber.

The work carried out by day labour, was commenced in March, 1904, and was not completed June 30. The expenditure during the fiscal year was: $914.36.

CRANE ISLAND (SOUTH SHORE).

Ile aux Grues, or Crane island, is in the River St. Lawrence, opposite Cape St. Ignace, in the county of Montmagny; it is about 40 miles below Quebec. Spring tides rise 20 feet; neap tides, 12 feet.

The inhabitants are chiefly engaged in farming.

During the past fiscal year, the renewal of the superstructure of the wharf, begun in 1902, was continued; for a length of 270 feet, on a height of 6½ feet, all the face timbers, cross-ties and longitudinals together with the top planking have been renewed, and 160 cubic yards of stone ballast were added.

These repairs were done by day labour during the months of August, September and October, 1903, at a cost of $3,496.07.

DESCHAMBAULT.

Deschambault, county of Portneuf, is a flourishing village on the north shore of the St. Lawrence and the Canadian Pacific Railway, forty-one miles above Quebec. A steamer plies semi-weekly to and from Quebec.

Owing to the decision of the department to build the proposed wharf by contract work, the expenditure was made to pay only for materials purchased prior to such decision, their delivery at Deschambault and services connected therewith.

There was also an expenditure of $195, incurred to repair the trestle roadway and put it in place at the opening of navigation between the isolated block and the shore.

Total expenditure for the fiscal year, $2,972.

ECHQURIE.

The sum of $98.65 was expended towards the removal of rocks at Echourie, county of Gaspé.

FATHER POINT.

Father Point, in the county of Rimouski, is on the south shore of the St. Lawrence, six miles below the town of Rimouski. Most of the ocean liners call there to land or take their pilots. The point is one of the few places on the south shore of the St. Lawrence, where deep water can be found at a relatively short distance from land.

A self-registering tidal gauge was established here some years ago by the Department of Marine and Fisheries. There are also a powerful compressed air fog-horn and an acetylene gas lighthouse.

It was found desirable a few years ago, that a deep water wharf be constructed at Father Point; tenders were called for and on November 8, 1901, a contract was awarded to Messrs. Heney & Smith for a section of the structure 600 feet long.

The work was carried out during the years 1902-03, and completed by the beginning of July, 1904, the amount of the contract being $57,821. The section is a very substantially built cribwork, thoroughly filled with stone; it is 600 feet long and 40 feet wide at the bottom; the sides are vertical up to the level of 5 feet below low water line, from this point, the east side is built with a batter of 1 in 4 and the west side is

vertical, the width at top being 32 feet. Both faces are sheathed with ha inches thick. The outer end stands in 18 feet of water at low water sprin

On May 17, 1904, a new contract was entered into with the same part construction of an additional length of 200 feet. At the close of the fiscal y the cribs was ready to be set in place. The kind of construction is the same

The expenditure for the year 1903-04 was $39,162.26.

GEORGEVILLE.

Georgeville, a village in Stanstead county, on the east side of Lake Me gog, 9 miles from Smith's Mills, to the southward of the town of Magog, on dian Pacific Railway, and 13 miles from Stanstead, on the Boston and Main It is noted for its lake sceneries, and as the site of many beautiful summer It contains two churches, Episcopal and Methodist, telegraph office, two h stores. It is a port of entry of importance and all steamers plying betwe and Newport (State of Vermont, U.S.A.) call at the wharf.

During the month of October, 1903, the sum of $78.57 was expended to repairs to the flooring and minor repairs to the wharf at that place.

GRANDE ENTRÉE.

Grande Entrée is situated on the western end of Coffin island. The s was expended towards the erection of a crane on the north-west corner of g pier.

GRANDE RIVIÈRE.

Grande Rivière, county of Gaspé, is on the Baie des Chaleurs, 21 mi west of Percé.

The sum of $965.79 was expended during the last fiscal year for repa wharf. Four hundred feet in length of the pier has been floored over with spr the head of the pier was raised 18 inches on a length of 75 feet, some min done to the shed and six hardwood fenders were placed on the outer end.

GRANDES BERGERONNES RIVER.

Grandes Bergeronnes, in Saguenay county, is on the north shore Lawrence, eighteen miles below Tadousac.

The entrance of the River Grandes Bergeronnes being obstructed by bou a channel of about 150 feet was cleared from the entrance to the village for of one mile.

In the years 1887, 1895, 1899, 1901 and 1902 a total sum of $1,254.32 was

During the fiscal year 1902-03, the work was continued in the chan work was done by blasting, by day labour. The amount expended was $39

During the fiscal year 1903-04, the work was continued in completing th of boulders in the river.

Spring tides rise 16 feet, neap 9 feet 1½ in.

Amount expended, $224.38.

Total amount of expenditure to July 1, 1904, $2,177.12.

GREEN RIVER.

Green river, which flows through the parish of Isle Verte, empties in Lawrence, about three-quarters of a mile west of Isle Verte church. Duri freshets, this river is liable to cause considerable damage by flooding the mi ing and disintegrating the land of the riparian properties.

In order to prevent further damage, or at least, to reduce it to the lowest possible amount, it was decided to improve the channel of the river, to facilitate the waterflow in the spring. To that effect, the following works were performed :—

A new channel, 800 feet long, 20 feet wide, was opened on the west side of the river; about 1,200 cubic yards of earth and 200 cubic yards of blasted rock being removed.

A dike, 200 feet in length, 8 feet high, on widths of 16 and 8 feet at base and top respectively, was built of open-faced cribwork, filled with stone, with a water tight sheathing in front. These works were done by day labour, during the months of November, 1903, and May and June, 1904; the amount expended was $3,698.76.

GRIFFIN COVE.

Griffin Cove, county of Gaspé, is seventeen miles north-west of Gaspé cape. The mouth of the river having been closed up by a gravel bar thrown in by north easterly gales, overflowed the flats and part of the village, causing a good deal of damage to property and to the fishing industry. A channel was cut through the bar and a training pier, 170 feet long, 22 feet wide and average height of 11 feet, was built to guide the current in the channel and keep it opened.

The sum of $1,999.06 was expended on this work during the last fiscal year.

GRINDSTONE.

Grindstone is a village on the south side of Grindstone island four miles east of Etang du Nord and composed mostly of Scotch farmers and Acadian fishermen.

For years past most of the freight for the Magdalen islands has been unloaded here and the building of a landing pier was greatly needed. In the fiscal year 1901-02 an approach of 605 feet, 25 to 50 feet wide, and of an average height of 9½ feet on the outside face was built along the eastern side of Grindstone cape.

The other face of the approach, exposed to the heavy easterly gales from the Atlantic ocean, is protected by a sheathing of split spruce logs, held in place by two sets of walings fastened by cross-ties and a double set of posts. A mattrass of brush was laid under the stone filling.

During the past working season the pier was extended 200 feet with an average width of 28 feet and an average height of 22 feet; six feet of the superstructure of the last 100-foot crib remains to be done. The depth of water at head of work is now 14 feet at low water spring tides.

The amount paid out during the past fiscal year on this work was $9,408.76.

Spring tides rise 4 feet; neaps, 2 feet.

GRONDINES.

Grondines, county of Portneuf, is situated on the north shore of the St. Lawrence, 48 miles above Quebec.

Owing to the decision of the department to build the proposed new wharf by contract work instead of by day labour, the expenditure incurred was for materials purchased prior to this decision, their delivery at Grondines and services in connection therewith, also for tools and plant.

Expenditure during the fiscal year, $4,395.60.

GROSSE ROCHE.

Grosse Roche, called Sacré-Cœur, in the county of Saguenay, is situated on the north side of the River Saguenay.

Sacré-Cœur is an important settlement of the Saguenay; it contains c post office, telegraph office, several stores and two cheese factories.

During the session of 1903, the sum of $1,000 was voted towards the co of a wharf.

Timber was purchased to the amount of $951.39.

HOUSE HARBOUR.

House Harbour is an important parish on the western end of All-right

The pier built at the channel during the fiscal year 1900-01 forms an ob feet by 100 feet with 10 feet of water at the head. A sum of $112.28 was sp material for repairs to the flooring and to raise the head of the pier that some 18 inches.

HULL.

Hull, the shire-town of the county of Wright, is situated on the Ot opposite the city of Ottawa. It possesses unrivalled water power privilege tains a number of saw-mills, a pulp and paper manufacture, a match factor

Two large iron bridges span the river at this point, connecting it with Ottawa. Population, 14,000.

The work of building a concrete and masonry wharf on the Ottawa r foot of Ste. Elizabeth street, was awarded by contract on October 30, 1900.

The wharf consists : 1st, of a landing block 130 feet wide and 70 built up to three different levels in ten feet of water, and constructed of substructure up to the water level, and a superstructure of concrete mas with filling between them ; 2nd, an approach from shore to the landing blo long built up also to three different levels, consisting of dry rubble mas with filling between them. During the fiscal year 1900-01 the cribwork su of the landing block and a portion of the dry walls were built and some fil at a total cost of $9,865.12.

During the fiscal year 1901-02, the work under contract was completed, works not provided for by contract were performed. These included : the of the joints of the coping stones of the dry masonry walls for 1,200 lin. fe of $788.45 ; the erection of a gas pipe railing on both sides of the appr length of 718 feet at a cost of $718 ; and the construction of a roadwa Elizabeth street, 600 feet long, 30 feet wide and protected on both sides by r having a batter of 1 in 1, at a cost of $5,615.62.

During the fiscal year 1902-03, some minor works were performed t the work thoroughly, and a substantial freight shed 50 x 40 feet dimension stories high was built at a cost of $5,207.05.

During the fiscal year 1903-04, repairs and maintenance amounted to $6

Total expenditure on this work up to June 30, 1904, is $54,118.55.

IBERVILLE.

Iberville, an incorporated town in the county of the same name, on the river and on the Central Vermont Railway, Canadian Pacific Railway and Un ties Railway, opposite the town of St. John's. It contains two churches, Roma and Episcopal, a number of stores, 1 iron foundry, several hotels, 3 potter mill and 2 agricultural implement factories. Population, 1,512.

During the fiscal year 1903-04, the following repairs were made to th that place, built in 1899. Half the floor of the head block was renewed, t approach was redoubled and the storehouse and guard railing were painted

The expenditure was $412.84.

ILE AUX COUDRES.

This island, with a population of 1,500, is in the county of Charlevoix, sixty-two miles below Quebec.

During the fiscal year 1903-04 the extension built in 1902-03 was sheathed with hardwood planks.

The amount expended during the fiscal year 1903-04 was $2,042.94.

ILE PERROT.

Ile Perrot is an island in Vaudreuil county, at the confluence of the Rivers Ottawa and St. Lawrence, and between the Lake of Two Mountains and Lake St. Louis. This island is about seven miles long and divides the Ottawa into two branches.

During June, 1904, minor repairs were effected to the flooring and guard railing to the wharf on the south shore of the island at a cost of $437.80.

ISLAND HOUSE, OR GRAND DISCHARGE.

Island House, Chicoutimi county, is situated at the head of the Grand Discharge of Lake St. John, seventeen miles from Roberval, it is a sporting resort with good hotel accommodation, a steamer, the 'Mistassini,' makes a daily trip from Roberval to Island House.

In 1894-95 the floating pontoon, built by the hotel proprietor, for landing passengers, was transferred to the Department of Public Works and a sum of $500 was expended in building an extension thereto 40 by 25 feet. The pontoon is now 100 x 25 feet, built of four rows of round logs of cedar set close lengthwise and crosswise, with floor stringers every 4 feet and covered with 2-inch planking.

The outer face is provided with nine guard fenders reaching a height of 6 feet above the flooring.

During the fiscal year 1903-04, the floor stringers were renewed and a new flooring was put on ; the fenders and the mooring posts were also renewed.

Amount expended, $182.17.

Total amount of expenditure, $686.17.

ISLE VERTE.

The village of Isle Verte, in the county of Temiscouata, is situated on the south shore of the St. Lawrence, sixteen miles below River du Loup and 131 miles east of Quebec. It contains flour, carding and saw-mills.

Spring tides rise 19 feet; neap tides, 12 feet.

During the past fiscal year 1903-04, the sum of $800 was expended to improve the harbour; 360 cubic yards of large boulders were removed from the mouth of the River Verte, in the vicinity of the head of the wharf.

Urgent repairs required to the planking of the wharf, have also been done.

KAMOURASKA.

The village of Kamouraska, in the county of same name, is situated on the south side of the St. Lawrence, ninety miles below Quebec; it is a well known place, most frequented as a summer resort. Spring tides rise 19:5 feet; neap, 12 feet.

During the fiscal year 1903-04, in order to provide shelter for schooners and other vessels and upon the special request of the navigators and business men of the place, it was decided to repair the old block standing on the west side of the new wharf and to connect it with the shore, by a light cribwork, 175 feet in length on a width of 20 feet.

The work was begun on May 20, 1904, and at the close of the fiscal year the old crib was repaired and about one half of the shore section was constructed.

The work was done by day labour and the sum expended was $3,915.81.

KNOWLTON LANDING.

Knowlton Landing is a post office in Brome county, on Lake Memphren Knowlton on the Canadian Pacific Railway.

During the months of March, April and June, 1904, some repairs we the public wharf at that place. They consisted in renewing several caps, stringers, repairs to the flooring and replacing two mooring posts with cast heads.

The expenditure during the fiscal year was $176.52.

LAC A BEAULIEU.

Lac à Beaulieu, in the municipality of Les Bergeronnes, is situated north of Les Bergeronnes village.

The outlet of Lac à Beaulieu is obstructed with boulders and rock, wh the floating of logs very difficult.

The sum of $297.76 was expended in removing boulders and blastin rock.

LAKE MEGANTIC.

Lake Megantic, is a post village in Compton county, on Lake Megan the Canadian Pacific Railway, 60 miles from Sherbrooke. It contains tw one Presbyterian and one Roman Catholic, one large saw-mill, one furnitu several stores, three hotels, telegraph office. Population, 1,883.

During the month of November, 1903, the sum of $51.13 was expended ate minor repairs to the wharf at that place.

LAPRAIRIE.

Laprairie, the chief town of the county of the same name, is situa south shore of the River St. Lawrence, seven miles above Montreal.

During the months of July and August, the sum of $878.74 was expen labour to effectuate repairs to the protection walls at that place. Two secti protection wall, of a total length of 823 feet, being too much decayed and to be repaired, it was decided to replace them by a concrete wall, 7 feet 8 i at the base, and a width of 3 feet at the top, by an average height of 18 fee effect, a contract was entered into with Messrs. Amiot & Lemay, of Montr sum of $29,650. The work was commenced in November, 1903, suspended winter and continued in May, 1904. At the end of the fiscal year, the wo half done.

Against the appropriation of $15,000, the sum of $14,951.04 was expen ing the amount of $878.74 for repairs, as above stated.

LES CUISSES D'ALMA.

Les Cuisses d'Alma, Chicoutimi county, in the little discharge of Lak three miles from the lake, is in the parish of St. Joseph d'Alma, and s from the village of that name.

At this place there are three rocks called the Cuisses d'Alma, and an is obstructs the channel of the Petite Décharge.

In 1901-02, the blasting of these rocks was commenced on the east sid expended, $575.92.

In the year 1902-03, the east side was completed and a portion of we done.

Amount expended, $1,229.37.

During the fiscal year 1903-04, the removal of the two points of rock was completed, and work was commenced on the island a short distance below.

Amount expended, $1,501.97.

Total of expenditure to July 1, 1904, $3,282.88.

LES ESCOUMAINS.

Les Escoumains, in the county of Saguenay, is situated on the north shore of the River St. Lawrence, twenty-one miles below Tadousac.

The Saguenay Lumber Company have an extensive saw and pulp mill at this place. There is one Roman Catholic church, telegraph and post office and several stores.

The harbour of Les Escoumains was obstructed by boulders. During the year 1902-03 the sum of $592.29 was expended in blasting part of the obstructions.

During the fiscal year 1903-04, the blasting of boulders at the entrance of and in the harbour of Les Escoumains was continued.

Amount expended, $198.25.

Total amount of expenditure, $499.38.

Spring tides rise 15 feet ; neaps, 9 feet.

LE TABLEAU (DESCENTE DES FEMMES).

Le Tableau—Descente des Femmes—is a new settlement on the north side of the River Saguenay, about sixty-one miles from its mouth. In view of giving facilities to the colonization of that portion of the Saguenay who have no other communication than by water, it was decided to build a wharf at this place.

During the year 1902-03 a block of cribwork 40 feet in length by 30 feet in width and a return of 30 feet by 25 feet, and also two piers 25 by 25 feet and 25 feet apart were commenced.

The block was sunk in 18 feet of water. The block and the return forming an L, are built of close-faced timber 11 by 11 inches and sheated on the outer corners with hardwood timber.

A landing slip was built in the outer block and one in the return on the west side. The piers are built of round logs open faced.

Amount expended was $5,035.71.

During the fiscal year of 1903-04 the work was continued and an approach was built. The corbels and part of the stringers have been laid.

The outer end of the structure is 38 feet high, the work was done by day labour.

The amount expended during the fiscal year 1903-04 was $3,018.33.

Total amount of expenditure to July 1, 1904, $8,005.71.

Spring tides rise 18 feet ; neaps, 11 feet.

L'ISLET.

The Village of L'Islet, in the county of the same name, is situated on the south shore of the St. Lawrence, fifty miles east of Quebec. Spring tides rise 21 feet ; neaps, 13 feet.

The wharf at this place has a length of 1,105 feet and a width of 31 feet, with a head block 116 feet wide. This wharf was substantially built with close-faced cribwork, it will nevertheless require heavy repairs in the near future; the superstructure is now in an advanced state of decay.

During the fiscal year ended June 30, 1904, the slip on the west side of the wharf, which had been partly repaired the previous year, was thoroughly restored; 450 spruce deals were used to make general repairs to the sidewalks and top planking. Some of the upper-face timbers were temporarily repaired.

The work was done by day labour at a cost of $496.17.

LOTBINIÉRE.

Lotbinière, in the county of the same name, is situated on the south sho St. Lawrence, about forty miles above Quebec.

At the beginning of 1904, a contract was awarded for the construct extension from the shore to the isolated block, a distance of 420 feet and 20 fe top.

At the end of the fiscal year the work had been commenced but not c The amount expended was $6,971.97.

MAGOG.

Magog, a thriving incorporated town, is on the Magog river, at the Lake Memphremagog, in Stanstead county, and a station on the Canadia Railway, 3 hours run from Montreal. It is a sub-port of entry and contains 4 English, Methodist, Roman Catholic and Union, 30 stores, 4 hotels, saw s mills, Dominion Cotton Company's mills with 800 operatives, 3 bakeries, 1 factory, 1 newspaper, 2 telegraph and 2 express offices and good schools. Po 3,516.

In order to accommodate the local trade a landing pier was purc August, 1875, for the sum of $2,500.

It is situated opposite the railway station, and is a pile structure 430 24 feet wide for the first 305 feet from the shore, and 40 feet wide for the r 125 feet. Its head is 12½ feet high above the bottom of the lake and star feet at low water.

Repairs.—In 1896-7, the most urgent repairs to the flooring were effe cost of $154.82. During the year 1899, a number of broken planks in the were removed, a new storehouse and guard railing were built at a total cost o

In 1901-02, minor repairs were made at a cost of $11.34.

This landing pier having become dangerous owing to decay, and as the leading to it was in a bad state, incommodious and is the property of the Pacific Railway, it was decided to build a new landing pier at the foot of La to that effect, permission was obtained by a resolution of the town council, 11, 1904, and the work was commenced. It consists of a stone embankmen in length by 26 feet in width on top, from the foot of Lake street, and s feet in length by 40 feet in width, was built with piles, caps, stringers and f

The work was not completed on June 30, 1904, it is being done by day l

The expendiutre during the fiscal year 1903-04 was $1,806.58.

MAGOUASHA.

Maguasha landing pier, is on the north shore of the Baie des Chaleurs, ture county, opposite the town of Dalhousie, N.B.

A contract was let for $7,500, for the construction of a wharf at this pl to be 330 feet long and 20 feet wide. The amount expended during the ye was $3,998.70. The work was not completed at the end of the fiscal year.

MARIA.

Maria wharf, on the north shore of the Baie des Chaleurs, Bonaventure

In May, 1902, a contract was awarded for the construction of a wha place.

In the year 1902-03 the sum of $11,991.13 was expended on the wharf.

During the fiscal year 1903-04 the work was completed and the a $20,640.65 was expended.

MATANE.

The village of Matane, in the county of Temiscouata, is situated on the south shore of the St. Lawrence, at the mouth of the River Matane, 240 miles below Quebec, and 30 miles from Little Metis, the nearest point on the Intercolonial Railway. It contains extensive saw-mills and a spoolwood factory. Spring tides rise 15 feet; neaps, 8 feet.

The breakwater standing on the west side of the mouth of the river, being badly damaged by ice during the month of November, 1903, some urgent repairs were done to it. Owing to high water, it was only at the beginning of the month of June, that the work could be resumed.

At the close of the fiscal year, all the materials, timber and iron, required to complete the repairs, were bought and paid for, and the work was progressing; it consists in repairing the cribs and renewing the whole of the sheet piles covering the seaward face of the breakwater.

The repairs are performed by day labour and the amount expended was $2,973.34.

MISTOOK.

Mistook, in the township of Taillon, situated on the Grand Discharge of Lake St. John, in the county of Chicoutimi, is also called Saint Cœur de Marie, and contains one Roman Catholic church, post office, several stores, two cheese factories, and two saw-mills.

During the fiscal year 1903-04, a pier 40 feet in length at bottom and 30 feet at top by 20 feet wide, and 23 feet in height, was sunk at 150 feet from high water mark; the pier is built with a landing slip in front (ice breaker) sheathed with 8-inch hardwood planks and also a slip on the outer face. The pier is built of open-faced roundlogs and fendered every 8 feet with 8 by 10-inch timber; the work was done by day labour.

Amount expended was $2,061.04.

MONT-LOUIS.

Mont-Louis, a village of considerable importance, in the county of Gaspé, and the first municipality below Ste. Anne des Monts, is one hundred and thirty-five miles below the nearest Intercolonial Railway station, Metis. The harbour of Mont-Louis, the largest and best situated on the St. Lawrence Gaspé coast, offers good water and good protection against all winds, except from northerly winds.

The landing pier being built from the west shore towards the eastern point of the bay, will, when completed, shelter it against northerly winds.

A crib 110 by 25 feet, and 10 feet high, was built and placed in position in July. The total expenditure during the last fiscal year was $4,999.69.

Spring tides rise 9⅛ feet, neaps, 5 feet.

MONTMAGNY.

Montmagny, in the county of the same name, is on the south shore of the St. Lawrence thirty-seven miles below Quebec. It is a thriving little town of over 2,000 inhabitants, important shippings of lumber are made by the Price Bros. Co., to European markets.

Besides a pulp mill, there are also two foundries and iron works.

The town is built on both sides of Rivière du Sud which has a perpendicular fall of 20 feet and empties into the St. Lawrence ; below the fall, the river expands and forms what is called the 'basin,' affording shelter from the winds, for vessels of moderate draught.

During the last fiscal year, the shed built on the shore end of the whar paired and painted, at a cost of $123.93.

Spring tides rise 21 feet; neap tides, 12 feet.

MONTREAL HARBOUR (LOWER DIVISION).

During the season of 1903, the remaining six sections of cribwork were built and sunk, completing the substructure of the main pier and eastern bu

The laying of footing blocks was continued from July to November, 19 ing sections 7 to 14 inclusive or a distance of 1,250 feet.

The work of the concrete walls was resumed on September 16, and carri November 19, the space built being sections 6 to 12 inclusive, or a distance hundred feet (the height of wall 18 feet above datum line, quantity of con 5,986 cubic yards).

The excavation was performed by the dredge 'King Edward VII' and t ials deposited as refilling behind the walls and behind the cribs.

After the excavation to prepare the site of cribs was completed, viz., fron ber 6, 1903, the dredging necessary to procure material for filling behind wal included in the original contract, and to June 30, 1904, the quantity retur extra has amounted to 149,150 cubic yards.

The quantities returned from June 30, 1903, to November 6, 1903, am 113,000 cubic yards.

The following is a summary of the principal items of work performed d fiscal year :

Oak sheathing of cribs	25,555	cubic feet.
Spruce and hemlock	220,800	"
Stone ballast	34,920	cubic yard
Iron in bolts, &c	261,200	pounds
Dredging	262,150	cubic yard
Concrete footing blocks	3,614	"
Concrete walls	5,986	"

The amount expended during the fiscal year 1903-04, was $209,104.96.

NEW CARLISLE.

New Carlisle, on the north shore of the Baie des Chaleurs, is the chie the county of Bonaventure.

During the year 1903-04, the sum of $1,300.93 was expended in proc timber required for the sheathing of the wharf at this place.

NOMININGUE.

Nomininguе, a post village in Labelle county, is on Lake Nomininguе an minus of the Canadian Pacific Railway, Laurentian Mountains Branch. It 1 Roman Catholic church, 1 convent, 5 hotels, saw and grist mills, several s telegraph office.

During the fiscal year 1903-04, the construction of five small wharfs menced. They consist of a head block, 31 by 20 feet, of open faced round l ballasted and floored with 3-inch plank, and a stone approach. They are thus : one on Lake Bourget, one on Lake Petit Nomininguе, and three Grand Nomininguе.

The work, carried out by day labour, was not completed on June 30, was well under way.

The expenditure during the fiscal year was $2,017.22.

NOTRE DAME.

The village of Notre Dame is situated on the west side of Lake Temiscouata, on the Temiscouata Railway, about midway between River du Loup and Edmunston, in the county of Temiscouata. It is the centre of an extensive lumber trade ; two steamboats and numerous other vessels are plying over the lake during the season of navigation, which does not usually close before the beginning of January.

Lake Temiscouata, is 30 miles long, on a width varying from 1 to 2 miles, while its tributaries, rivers and lakes, are far famed among hunting and fishing sportsmen.

In order to provide landing accommodation on both sides of the lake, two small piers of open faced cribwork were commenced at Notre Dame during the month of November, 1900 ; one on the west side, opposite the church, and the other on the east side. The expenditure during that year was of $1,068.37.

In 1901 these piers were raised 5 feet at the outer ends and brought level to the shore ground; they were filled with stone ballast and planked over with spruce deals. Stairways were provided for landing at low water stage. The two piers were sheathed on all sides. The amount expended in that year was $1,185.72.

During the fiscal year 1902-03, the sum of $1,124.72, was expended in building a close faced extension 30 x 25 feet and 17 feet high to the pier on the west side of the lake.

In the course of the fiscal year 1903-04, the pier standing on the east side was also extended ; an addition 30 x 25 feet and 18 feet high, of close faced cribwork was built at a cost of $1,199.50.

The whole works were performed by day labour and the total expenditure, since the beginning, has been $4,578.31.

PASPEBIAC.

Paspebiac is in the county of Bonaventure, on the Baie des Chaleurs, 68 miles from Percé.

During the year 1903-04, a contract was let to build a wharf at this place for the sum of $19,695. It is 450 feet long by 30 feet wide.

During the year 1903-04 the work done on the contract amounted to $5,705.82, but the work was not completed.

PERCÉ.

Percé, the shire town of the county of Gaspé, is situated on the Gulf of St. Lawrence, thirty-six miles from Gaspé basin. The harbour consists of two small coves called the north and south coves.

In 1900, a contract was awarded for the construction of a wharf in the north cove, it is 670 feet long, 20 feet wide for a length of 260 feet, thence tapering to a width of 29 feet at the outer end which stands in 13 feet at low water spring tides. At the end of 1902-03, the structure was completed.

During the fiscal year 1903-04, rock and boulders were removed from the harbour at Red Head and White Head at a total cost of $636.93.

Seventy feet on the east side of the south beach or old wharf at Percé was repaired by sheet piling.

A shed and waiting room on the shore end of new wharf, north beach, 30 by 40 feet was partly built ; 66 per cent of the work was done.

A slip 10 by 10 feet was built at the outer end of north pier and a roadway built from the main road, at a cost of $1,387.26.

The total expenditure for the year 1903-04 was $1,786.89.

PETIT BONAVENTURE.

Petit Bonaventure, county of Bonaventure, is situated on the Baie des
During the fiscal year 1903-04, the sum of $200 was expended in lov
approach to the wharf.

PETITE RIVIÈRE AU RENARD.

The sum of $50 was expended towards the removal of rocks at Petite R
Renard, county of Gaspé.

PETITE RIVIÈRE EST.

Petite Rivière Est, is in the county of Gaspé. During the last fiscal yea
of $175 was expended towards the removal of rocks from the harbour.

PETITES BERGERONNES.

Petites Bergeronnes, county of Saguenay, is situated on the north sh
St. Lawrence, fifteen miles below Tadousac. There is an important saw-m
River Petites Bergeronnes.

The entrance to, and the river itself, being obstructed by boulders, a ch
cleared up to the saw-mill.

Spring tides rise 16 feet, neap 9 feet.

Amount of expenditure during the fiscal year 1903-04, $611.36.

PETITES TOURELLES.

One hundred dollars were spent towards the removal of rocks and the
a channel, 30 feet wide, through a shoal of large boulders at the entrance
bay used by fishing boats, at Petites Tourelles, county of Gaspé.

PETITE VALLÈE.

Fifty dollars were expended towards the removal of rocks at the mou
Little Vallée river, county of Gaspé.

PIERREVILLE.

Pierreville, a thriving post village in Yamaska county, on the River S
near its entrance into the St. Lawrence, 28½ miles north-east of Sorel, the
minus of the South Shore Railway.

It contains 1 Roman Catholic church, 1 telegraph office, about a doz
saw, grist and carding mills, and has a very extensive lumber trade. Bucksk
mitts and shoes and baskets are made here in large quantities by a tribe
quis Indians. Ship building is also engaged in. Population of the village

By the fact that the private wharf at Pierrevillle is situated above the
the South Shore railway, and that since the construction of that bridge,
and vessels cannot pass under the bridge, it was decided to build a public
mediately below the bridge; to that effect a right of way, from the public r
river was purchased, part from Mr. Jos. Rasconi, of Pierreville, and part
Abenaquis Indian reserve, for the sum of $700.

On June 30, 1904, the work was not commenced, but materials had been
for the sum of $3,816.91.

The work will be carried out by day labour during next fiscal year.

POINTE À ELIE.

Pointe à Elie is the extreme south-easterly point of Allright island, two miles ast of House Harbour Catholic church.

The steamer 'Amelia' calls at Pointe à Elie for mails and freight and for shelter uring north-easterly gales.

The construction of a landing pier and breakwater will give here the best of helter from all storms and specially from easterly gales that prevail in the spring.

During the fiscal year 1903-04 a length of 195 by 24 feet wide of the pier proper as built.

The amount paid out on this work during the last fiscal year is $10,431.45.

POINTE AUX ESQUIMAUX.

Pointe aux Esquimaux, in the united counties of Chicoutimi and Saguenay, is tuated on the northern shore of the River St. Lawrence, 525 miles below Quebec.

Pointe aux Esquimaux is the chef lieu of the north shore and contains one oman Catholic church, one convent, a hospital, 3 stores; it is the most important rading post of the north shore for the traffic of fur, fish and oil.

The wharf purchased by the government in 1895 had a length of 125 feet and a idth of 30 feet. In 1895-96, it was lengthened 60 feet by the construction of a ock 30 by 30 feet and 32 feet in height, connected with the old work by a platform feet in length, the wharf is now 185 feet in length, 30 feet in width and has a depth f water, at its outer end, of 24 feet at low water.

Amount expended $4,028.43.

During the fiscal year 1902-03 a block of 30 by 30 feet and 50 feet high was built 41 feet of water, 15 feet from the outer end of the wharf and connected thereto y stringers 10 by 12 inches and 3-inch tamarack deals.

Amount expended $1,633.78.

During the fiscal year 1903-04 a crib 30 by 30 feet was built and sunk alongside f the work built in 1903; as the new work is expected to settle to a certain extent, its op was only finished in a temporary manner. Spring tides rise 5 feet, neaps 3 feet.

Amount expended, $5,099.93.

Total amount of expenditure $10,606.02.

POINTE AUX TREMBLES.

Pointe aux Trembles, county of Portneuf, is a village on the north shore of the t. Lawrence, nineteen miles above Quebec, the nearest railway station is Pont Rouge. n the Canadian Pacific Railway, distant three miles.

Population about 1,250. Spring tides rise 17 feet, neaps 10.

During the fiscal year 1903-04, a road was opened from the public road to the harf; fences and drains were built on each side of the road. The amount expended as $1,343.88.

POINTE FORTUNE.

Pointe Fortune, a post village in Vaudreuil county, is situated on the south shore f the River Ottawa, seven miles from Grenville, and forty-five miles north-west of Iontreal.

It contains two churches, two stores, two hotels, &c. It is the terminus of a ranch line of the Canadian Pacific Railway to Rigaud.

In order to better accommodate the traffic by water, the Crown purchased in 1902 rom Mr. W. Brown, a wharf 224 feet long, parallel with the shore, together with two ights of way, one at each end of the wharf, connecting with the public road. These oads are respectively 130 and 120 feet long by 18 feet and 20 feet wide, and a strip of

land between the roadways, 158 feet long by 50 feet wide, 80 feet from the p and adjacent to the wharf, was also purchased, to be used as a cattle yard, for the sum of $1,000.

The top of the structure, which was in a bad state of decay has been rem to 1 foot below low water on a width of 10 feet, and the wharf rebuilt on sou tions, with close-faced cribwork, well ballasted with stone. The new work high for the upstream 100 feet of its length, thence sloping upward to a he feet in the next 40 feet, and level for the remaining 84 feet. The wings at are 25 feet long, joining the high ground of the shore. The outer face is batter of 1 in 12, and the upper and lower corners are protected with steel b ⅜-inch thick. The top of the wharf, for a width of 12 feet from the out covered with three inch planks.

Completed during the fiscal year 1903-04, the sum of $1,078.93 was ex complete the wharf, to erect a storehouse and waiting-room and to fence in yard.

The total expenditure on that work is:—

Purchase price	$1,036 8
Construction	5,078 3
Total	$6,115 1

PORT DANIEL.

The village of Port Daniel is on the north shore of Baie des Chaleu county of Bonaventure.

During the year 1903-04, a sum of $2,500 was expended on the repa wharf at this place.

The work consisted in putting two hundred feet of pile sheathing and re wharf with stone ballast. A further sum of $400 was expended in lowering the road leading to the wharf.

The total amount expended during the last fiscal year was $5,441.79.

QUEBEC HARBOUR.

In order to afford more accommodation for large ocean steamers to l grants and general freight in the harbour of Quebec, the department decide to build an extension, in northerly direction, to the present breakwater, b years ago on the river front of the harbour.

On May 8, 1903, a contract was awarded to Messrs. Dussault & Le Lévis, for the construction of 462 feet of the extension, and on June 11, 190 contract was signed by the same contractors for an additional length of 5 the same class of work as called for by the first contract, the prices in being $198,700 and $239,942.87.

The work was commenced in May, 1903, and at the end of June of that sum of $18,831.65 had been paid to the contractors.

The work is being built of timber cribwork, filled with stone ballast, up above low water spring tides, the cribs are founded on a level bed of rul 4 feet in thickness resting on the sand bottom previously dredged to 46 fe water; on top of the cribs, the superstructures will be built of concrete o height of 21 feet and will stand 6 feet above high water spring tides.

The back of the cribs and concrete superstructure will be filled to coping dredged material, forming an embankment which will increase the available by about 220,000 superficial feet.

The depth of water at the outer face of the new work will be 42 feet at spring tides which rise 18 feet.

During the fiscal year 1902-03, three timber cribs, forming a total length of 462 feet, were completed ready to sink. the foundation for these cribs had been dredged, the bed of rubble stone had been partly deposited and earth filling, amounting to 45,000 cubic yards, had been done, a quantity of building materials had been delivered.

Work on the second contract was not commenced until the beginning of July.

The amount expended on this work during the fiscal year 1903-04, was $68,347.83, making a total of $87,237.98 since the beginning of the work.

CEDARS (REFUGE PIER.)

This refuge pier is an isolated block situated on the River St. Lawrence, about two miles east of Cedars, Que. It has a length of 80 feet by width of 20 feet. The object of the pier is to offer a mooring place for the rafts and steamboats going down the rapids at times of fog and wind.

During the months of October and November, 1903, and February, 1904, the pier, which was much dilapidated, was rebuilt from the low water level to a height of 4 feet, fully ballasted and provided with two strong cast-iron mooring posts firmly adjusted.

The work was carried out by day labour at a cost of $522.21.

RICHMOND.

Richmond, an incorporated town in Richmond county, is situated on the St. Francis river; it is a station of the Grand Trunk railway, and is 76 miles from Montreal.

It contains, besides the county buildings, 4 churches, 26 stores, 3 hotels, 1 gristmill, 2 printing offices, 1 bank branch, a government post office building, &c. It is connected with Melbourne on the opposite side of the river by a municipal iron bridge.

During the spring freshets, almost every year, the town of Richmond is flooded to a height of 5 or 6 feet, owing to ice-jams formed in the River St. Francis, at a place called 'The Narrows.' In order to prevent the occurrence of the ice jams and the consequent floods, which have caused considerable damages in past years, it was decided to build four ice breakers, three above 'The Narrows' and one above and opposite the pier of the municipal bridge. In December, 1902, a contract was entered into with Mr. Ross, of Richmond, for the construction of the four ice breakers, for the sum of $10,317. The work was commenced in February, 1903, and completed in September the same year.

In order to complete the system of protection, it was decided to build four additional ice piers situated 150 feet above a dam. in the St. Francis river, about 10 acres above the bridge. The object of those ice piers is to retain the ice which runs over the dam during the winter and forms a large accumulation of ice a few hundred feet below the said dam and contributes largely to the spring floods. To that effect, an agreement was entered into with the contractor, September 28, 1903, for the construction of four additional ice piers of close-faced cribwork, 18 by 12 feet, to a height of 2 feet above the level of the water, fully ballasted, for the sum of $4,000. The work was completed in December the same year.

In June, 1904, the slanting faces of the four ice breakers were sheathed with 3-16-inch steel plates, and the up stream corners of the four ice piers above the dam, sheathed with ¼-inch steel plates at a cost of $628.91.

The whole expenditure on that work is $16,250.31.

The work has proved effective, as there have been no floods since the construction of the ice-breakers, and the municipal bridge, which was carried away in 1902 by the ice and rebuilt during the winter of 1903, has suffered no damage.

RIMOUSKI.

The town of Rimouski, in the county of the same name, is situated on t shore of the St. Lawrence river, 180 miles below Quebec, its population is ab inhabitants. It is an important station of the Intercolonial Railway ; it is place where the royal mails are transferred from steamers to the railway.

The spring tides rise 15 feet ; neaps, 9 feet.

Owing to the worm eaten condition of the east side of the wharf an widen the structure, which has a railway track thereon and is only 20 feet was decided to construct additional cribwork along the east side of the wh length of 830 feet, 20 feet wide at the bottom, 18 feet wide at the top bui height of the present wharf.

The works were commenced on May 1, 1904. During that part of year, ending June 30, the remains of an old crib 250 feet long, and stone bal were obstructing the place to be occupied by the new cribs were removed by labour to extreme low water. The remaining part under water will have to be by a dredge.

Five cribs forming a length of 526 feet by 20 feet wide, 20 feet high, h sunk.

The face timbers of those cribs are round spruce logs 27 feet long ; th and lower faces are notched every 8 feet to a thickness of 10 inches with faces, to receive the flatted ends of the cross-ties.

The cross-ties are round spruce of sufficient length to reach from side t the work, laid 8 feet apart, except the lower row where they are 4 feet, centre.

Trifling repairs have been done to the flooring, and the western inclined rebuilt on a length of 150 feet, for an average height of 8 feet.

At the end of the fiscal year, the sum of $27,236.75 had been expended quantity of materials was on hand for the continuation of the work. This being done by day labour.

RIVER DU LIÈVRE.

The Long Rapid, River du Lièvre, is seven miles above the Little Rapids dam, and 19 miles above the town of Buckingham. The construction, in 18 lock and dam at Little Rapid, now called Poupore, rendered the River du Liè gable through the Long Rapid and for one mile above, to the High Falls, reached daily during the season of navigation, by a steamer from Buckingh ing to the existence of large boulders, the narrow channel and swift current, t gation through the Long Rapid was very dangerous.

During the fall of 1903, the sum of $864.55 was expended in removing 35 of sizes varying from 10 to 90 cubic feet, the largest having to be blasted.

Owing to a sudden rise of water, the work had to be abandoned at th ning of October.

RIVIÈRE DU LOUP.

Rivière du Loup, or the town of Fraserville, is the chef-lieu of the co Temiscouata. It is situated on the south shore of the St. Lawrence, 114 mil Quebec. It is a thriving little town of nearly 4,000 inhabitants, which contain manufactories, including two pulp mills.

The River du Loup point, where the wharf is located, is distant two mi the village; it is one of the best-known and most frequented summer resort St. Lawrence. Spring tides rise 19 feet; neaps, 12 feet.

Owing to the action of the ice and waves, and also the considerable w tear due to the heavy lumber traffic, annual repairs are required on this wha ing the fiscal year 1903-04, the following works were performed :—

To meet the requirements of the Richelieu and Ontario Navigation Company and others, a movable slip, 41 feet long, 9 feet 4 inches wide, was built placed on the east side of the outer end; the old one, which was in bad state, has been thoroughly repaired.

A surface of 8,090 square feet, on the west side of the wharf, was sheathed with spruce 4 inches thick, and the sheathing of the outer end was also sheathed; 525 spruce deals, 3 x 9 inches, were used to repair the top planking.

Owing to the increasing traffic and the needs of tourists, the actual buildings were extended by the construction of an addition 30 x 24 feet, divided into two parts, a general waiting room and a freight shed; the whole was well finished and painted. The ladies waiting room and the agent's office were also painted. These new works and repairs were done during the months of September, October and November, 1903, at a cost of $3,613.20.

RIVIÈRE OUELLE.

The pier is situated at Pointe aux Orignaux, five miles from the village of Rivière Ouelle, in the county of Kamouraska, on the south shore of the St. Lawrence, opposite Murray Bay, on the north shore. A branch of the Intercolonial Railway, built from Rivière Ouelle station, to the outer end of the wharf, bears trains connecting with a steamer which crosses the St. Lawrence several times a day during the summer season, calling at Murray Bay and other places on the north shore.

Spring tides rise 20 feet; neaps, 12 feet.

During the month of May, 1904, the renewal of the sheathing of the outer end, which is 238 feet wide, by 51 feet long, was commenced; the old sheathing being worn out and decayed, was removed over the whole surface of the four sides of the head of the pier. The north-east corner was badly damaged, allowing the stone ballast to fall into the river through an opening existing in the face timbers near low water mark; this opening has been closed and the corner sheathed with 8 inches thick rock elm planks.

Twenty thousand eight hundred and forty-three feet B.M. of black birch, 20,378 feet of elm and oak, and 14,076 feet of tamarack have been used during the months of May and June to renew the sheathing of the outer end. Besides, 16,983 feet B.M. of black birch, 18,000 feet of elm and 12,500 feet of tamarack were brought and paid for out of the appropriation for the fiscal year, together with a certain amount of boiler plates to protect the outer corners.

The quantity of hardwood now in hand, is considered nearly sufficient to complete the repairs to the sheathing of the wharf.

The amount expended during the fiscal year ended June 30, 1904, was $5,845.34.

RIVER RICHELIEU BOOM AT ST. JOHN'S.

In order to give valuable assistance to boats passing through the swing span of the Vermont Central Railway bridge at St. John's, counties of St. John's and Iberville, a boom was constructed.

The boom has a length of 350 feet by a width of four feet, and is moored to clusters of six piles each, driven 15 feet into the ground every 50 feet, except the up stream cluster, which has ten piles, and is protected against the ice by a steel plate, 6 feet by 6 feet, 7-16 inch thick. The piles of each cluster are well secured together by screw bolts.

The boom stands in 9 feet of water at extreme low water level, and in 14 at extreme high water level.

The timber used is 12 by 12 inch hemlock for the booms, and round pine and oak 14 inches at butt end, for the piles.

The work was commenced in November, 1900, and completed in April, 1901, at a cost of $1,504.45.

During the spring 1904, the head and two intermediate clusters of p broken by the ice, and the boom was also much damaged. A close-faced crib breaker 20 by 12 feet and 18 feet high, was built in place of the head cluste to moor the boom; the two broken clusters of piles were renewed, the boom paired and sheathed diagonally with 3-inch pine deals.

The work carried out by day labour was completed on June 30, 1904, at $1,259.88.

ROBERVAL.

The town of Roberval, in the county of Chicoutimi, is built on the ea the River Ouitchouanish, near its mouth, on the south shore of Lake St. miles east of Quebec city and is the northern terminus of the Roberval bran Quebec and Lake St. John Railway which taps the main line at Chambord

In 1892-93, the department purchased from H. G. B. Beemer, Esq., for of $750 an isolated block of cribwork 75 feet long by 30 feet, which had beer him at the mouth of the river, 425 feet from the shore of the lake, together right of way to the public road.

During 1892-93 and 1893-94, this block was connected with the shore by an approach 425 feet long, by 25 feet wide, at a cost of $5,469.06.

In 1894-95, a head block parallel with the shore 50 feet by 30 feet and height, with a slip at the outer end, was added, and the entrance to the ha deepened and widened.

The cost of this work was $4,200.41.

This pier as completed in 1895, was 500 feet long and 25 feet wide gener the exception of the headblock, which measures 50 feet by 30 feet, and has water along its outer face, at low water and 19 feet at high water during the navigation. In the winter the lake recedes beyond the head of the pier whic pletely dry all round. During the year 1896-97, a combined freight and she 45 by 24 feet, was erected on the head block at an expense of $425.98.

In 1897-98, a block of cribwork, 75 by 25 feet, was sunk close to the chased from Mr. Beemer for the purpose of widening that part of the wharf Amount expended, $715.86.

In 1899, the wharf was destroyed by fire and rebuilt in 1900-1901, for a 500 feet, a width of 30 feet and a height of 23 feet, a waiting-room 15 by 18 a freight shed 15 by 28 feet were erected on the wharf.

Amount expended, $9,747.82.

During the year 1902-03, the head of the wharf was widened 15 feet on side for a length of 60 feet by the construction of a block of cribwork, from a trestle work was built to the shore, the trestles are 8 feet apart and built 12 spruce timber with four stringers of 12 by 12 ready to receive the slee extension was specially made to allow the Quebec and Lake St. John Railwa the wharf.

Amount expended, $4,577.11.

During the fiscal year 1903-04, the greater portion of the trestle work year was planked over with 3-inch plank and between trestle work and th stringers were laid, resting on a cap piece 12 by 12 inches, the stringers are inches and covered with planking of 3-inch deals.

The amount expended was $653.45.

Total amount expended to July 1, 1904, $26,502.69.

SABREVOIS.

The parish of St. Anne de Sabrevois, in the county of Iberville, is situat east shore of the River Richelieu, 7 miles from Iberville, and 6 miles from andre, on the Canadian Pacific Railway. It is a station of the East Richeli

lway. It has the largest creamery in the province of Quebec, two cheese factories, hotel, three stores, one door and sash factory, one post and telegraph office, and churches, one Roman Catholic and one Protestant.

In order to better accommodate the traffic by water to and from this place, an old rf with a right of way from the public road to the river, a distance of 1,372 feet, purchased from Mr. Wm. Ryan, for the sum of $500. As the old wharf was dila-ated, a new wharf was built in its place.

The new structure consists of the following, viz.:—

(a.) A stone embankment 200 feet long by 20 feet wide, with slope 1 in 1 on the s.

(b.) A trestle approach 120 feet long, 24 feet wide.

(c.) A head block of pile-work 108 feet long, parallel to the channel, by a width 0 feet, with an ice-breaker of crib-work at its upstream end.

The work, carried out by day-labour, was commenced in February, 1900. The k was continued during the next fiscal year and completed in November, 1901.

In June, 1902, the sum of $988.07 was expended to raise, improve and fence the lway.

During the spring of 1903, the road was under water for several days and greatly aged by the waves. During March and April, 1904, the road was raised 2 to 3 feet a distance of 500 feet from the wharf, 15 feet wide on top, with stone and gravel.

The work was completed in June of the same year. Expenditure during the l year, was $693.14.

Total expenditure on that work, $8,264.91.

ST. ALEXIS.

St. Alexis, is on the south shore of Ha! Ha! bay, River Saguenay, about 63 miles n its mouth.

In order to accommodate the increasing trade of the locality and afford landing lities at this place for the steamers frequenting the River Saguenay, the sum of 00 was appropriated at the session of parliament of 1898 for the construction of isolated block. The block is 50 feet long by 25 feet wide, and 27 feet high, the r end is a distance of 1,446 feet from the high water mark of spring tides.

In 1899-1900, two blocks, one 80 feet and the other 68 feet in length were built n shore in view of connecting the outer block; these blocks are 25 feet wide and eet high at the outer end.

The expenditure was $3,999.

In 1900-01, an addition of 250 feet long and 25 feet wide was built at the cost of 16.63.

During the year 1902-03, an extension to the shore wharf, 150 feet in length, 25 e, were constructed 25 feet south of the work commenced in 1898; they are placed n each other and are 21, 22, 23 feet in height respectively.

Expenditure, $4,000.01.

During the year 1902-03, an extension to the shore wharf, 150 feet in length, 25 wide, and 21 feet high at the outer end, was built. The work done is open-faced work, and built 11 x 11-inch face timbers with fenders at every 10 feet, the flooring 3-inch red spruce. The structure is filled with stone. Expenditure, $3,994.71.

During the last fiscal year, five piers located 25 feet apart, were built, the first from the old work is 20 by 35 feet, with a landing slip, the other four are 20 by 25 , a portion of the wharf built last year was completed with stringers and flooring, span and the top of the first pier were also completed, the stringers are 10 by 12 es, the four other piers are ready to receive the corbels and stringers.

Amount of expenditure during the year, $4,082.35.

Spring tides rise 18 feet; neaps, 11 feet.

Total of expenditure, $24,067.41.

ST. ALPHONSE.

St. Alphonse de Bagotville, is at the head of Ha ! Ha ! bay, on the sout of River Saguenay, sixty-six miles from its mouth.

A landing pier was built here prior to confederation by parochial autho cost of about $3,200. In 1876, an arm was built by the department on sou this pier. 55 feet long by 26 feet wide, at a cost of $3,084.34.

In 1881, the pier was strengthened and repaired at a cost of $3,897.20 1881-82, 378 feet of the original pier which had been burned down to low wat the shore end was rebuilt for an average height of 10 feet, a large portion o ing renewed and other repairs effected, at the cost of $2,204.59.

In 1882-83, a block of cribwork was sunk close to the pier and filled wi

Expenditure, $4,307.40.

During the year 1883-84, the block was completed at the cost of $3,586.

In 1884-85, the work executed consisted in raising the wharf 2 and 3 fe length, constructing a movable slip and erecting an open shed 80 by 66 f outer end.

Expenditure, $4,680.55.

Repairs were made to the flooring of the wharf in 1887-88, at a cost of

In 1888-89, the flooring of the wharf was renewed for 300 feet of its le slip was built.

Expenditure, $1,024.54.

In 1889-90, the flooring at the end of the wharf was renewed and oth executed at a cost of $809.27.

During the year of 1890-91, the planking of the wharf was renewed ove ern 200 feet, a quantity of stone ballast was put in.

Expenditure, $1,000.

In 1893-94, the work executed consisted in sheathing a length of 260 fe inch red spruce.

The expenditure amounting to $1,200.

During the fiscal year 1896-97, a shed 30 by 45 feet was built on the e of the pier, the face timber on the slip was renewed.

The expenditure, $487.78.

In 1898-99, the planking and stringers have been completed on a len feet, and the north-east side of the pier was sheathed with 5-inch tamara length of 275 feet.

The work was done by day labour at a cost of $3,000.57.

During the year 1899-1900, the north and south sides of the pier for a 250 feet was sheathed with 5-inch tamarack and the planking was renewe same length at a cost of $548.

The wharf is 436 feet in length 24 feet in width, with an outer block of length by 85 feet in width, with a depth of 18 feet of water at low water s at the outer end of the wharf giving the structure a total height of 40 feet.

The work done during the year 1902-03, consists in general repairs to th the shed, and new fenders. The shed was roofed with sheet iron.

The amount expended was $1,500.

During the fiscal year 1903-04, a crib 30 by 30 feet was built on the w the wharf with a landing slip, this crib is built of open face timber, sheath inch plank and fendered every 8 feet with 8 by 10 inch timbers, it is bal entirely completed.

The sheet iron roof of the sheds was renewed, a new waiting-room, fr and cheese cold storage room were built and painted, the repairs to the floo commenced.

Spring tides rise 18 feet, neaps 11 feet.

Amount expended in 1903-04, $2,465.77.

Total expenditure by municipality, $3,200.

Total expenditure by federal government up to July 1, 1904, $35,862.49.

ST. ANDRÉ.

The village of St. André, in the county of Temiscouata, is situated on the south ore of the St. Lawrence, about fifteen miles west of River du Loup and 100 miles low Quebec.

The place is somewhat frequented as a summer resort; it contains a foundry and important machine factory.

Spring tides rise 19 feet; neaps, 12 feet.

The wharf owned by the Department of Public Works at St. André, consists of an rthern embankment 850 feet long with a mean height of 6 feet and nine piers con-cted by platforms of 30 feet spans.

During the months of September and October, 1903, the repairs and improvements the earth approach to the wharf have been continued; a length of 253 feet was roughly repaired, the expenditure being $750.

In the course of the month of May, 1904, the construction of an addition to the arf, 80 feet in length, on a width of 26 feet, was commenced. At the close of the ar, nearly three-quarters of the structure was built; it consists of close-faced crib-rk filled with stone. The work has been done by day labour at a cost of $3,120.42, rming a total expenditure of $3,120.42 for the fiscal year 1903-04.

ST. CHARLES DE CAPLAN.

St. Charles de Caplan is on the north shore of the Baie des Chaleurs, in the unty of Bonaventure.

During the year 1903-04 a contract was let to build a breakwater at this place the sum of $13,700. The work is to be 400 feet long and 20 feet wide.

The work done during the year 1903-04 amounted to $5,118.80, but was not com-ted at the end of the fiscal year.

ST. FELICIEN.

St. Felicien, a post village in Chicoutimi county, is on the Assametquagon river, miles from Roberval, on the Quebec and Lake St. John Railway, it contains one man Catholic church, 5 stores, 1 hotel, and four saw-mills. Population, 1,200.

During the year 1895-96 a wharf was built to accommodate the local trade. It is feet in length, 26 feet in width and 22 feet high at the outer end, at which vessels awing 8 feet can lie at low water. A shed 20 feet square was erected on the wharf its outer end.

During the year 1899 an addition 90 feet long, parallel with the channel, and 40 t wide was constructed at right angles to the wharf at its outer end.

During the year 1900, the sheathing which had been damaged by ice, was renewed a length of 30 feet and 10 feet high at a cost of $100.

During the fiscal year 1903-04, 15 boulders obstructing the channel were removed. mount expended $302.94.

Total expenditure up to June 30, 1904, $3,503.81.

ST. FIDÈLE.

St. Fidèle, is situated on the north shore of the St. Lawrence, 9 miles below rray Bay and in the county of Charlevoix.

During the fiscal year 1903-04, the sum of $3,704.85 was expended for chase of timber to be used in the construction of a wharf at this place. It w wards decided to build the work by contract.

ST. FRANÇOIS, ISLAND OF ORLÉANS.

St. François, is situated at the lower end of the Island of Orleans, in th of Montmorency.

During the fiscal year 1903-04, the isolated block commenced in 1902-0 south shore of the island, was completed, the work was done by contract.

The expenditure for the year 1903-04, was $8,305.96.

ST. FULGENCE.

St. Fulgence (otherwise called L'Anse aux Foins) is a small village in Ch county, on the north shore of the Saguenay river, ten miles below Chicoutim

It contains one Roman Catholic church, four stores and two saw-mills.

During the year 1903-04 the construction of a wharf was commenced, i of a shore approach, 75 feet in length, 22 feet in width and 10 feet in height, block of cribwork 25 x 22 feet, 14 feet high, placed at a distance of 25 feet outer end of the approach.

This work is built of round logs open-faced, and intended to be sheathed; t is fully ballasted.

Expenditure, $998.37.

Spring tides rise 20 feet, neaps, 13 feet.

ST. GÉDÉON ISLANDS.

St. Gédéon Islands, Chicoutimi county, in the parish of St. Gédéon, are near the south-east shore of Lake St. John, thirty-nine miles west of Rober parish contains one Roman Catholic church, several stores, post office, two ch tories, two saw-mills, telegraph and railway station. Population, 1,200.

During the fiscal year 1903-04, a certain quantity of timber was purchase of the construction of a wharf at that place.

Amount expended, $2,172.04.

ST. IRENÉE.

St. Irenée, is situated on the north shore of the St. Lawrence, in the c Charlevoix.

During the fiscal year 1903-04, the sheathing of the extension to the wh in 1902-03, was completed.

The expenditure for the year 1903-04, was $7,613.06.

ST. JEAN CHRYSOSTÔME.

Every spring, during the freshets, the English river and the Black river and cause considerable damage in the village and parish of St. Jean Chrysos area of about 2,600 square arpents of land, is under three to five feet of wat several days. In order to prevent, or at least considerably diminish those d floods, it was decided to deepen the bed of the English river from its conflue the Black river, opposite the village of St. Jean Chrysostôme, on a distance of a width of 60 feet and a depth of 4 feet. At that place the bed of the Engl is solid rock and 4 feet higher than the normal bottom, acting as a dam whi the water to overflow upon the surrounding low lands. To that effect, the sum was voted by parliament during the session of 1903.

During November, the same year, the sum of $892.98 was expended to procure and install a steam rock drill and boiler, and to blast and remove a certain quantity of rock, but owing to the short days and cold weather, the work had to be suspended, it was resumed in May, 1904, and continued until June 30, but was not completed.

The work was carried out by day labour.

Expenditure during fiscal year 1903-04, $2,875.69.

ST. JEAN, ISLAND OF ORLÉANS.

St. Jean is situated on the south shore of the island of Orleans, in the county of Montmorency.

During the fiscal year 1903-04, the flooring of the wharf was partly renewed and the sheathing was repaired.

The expenditure for the fiscal year 1903-04, was $1,266.52.

ST. JEAN PORT JOLI.

The village of St. Jean Port Joli, in the county of L'Islet, is situated on the south shore of the St. Lawrence, 60 miles below Quebec. Spring tides rise 21 feet; neap tides, 13 feet.

The wharf at that place has a total length of 454 feet; a depth of water of 5 feet is left at the outer end, at low water spring tides. The wharf consists of a shore part or approach composed of platforms connecting piers, 180 feet long and 18 feet wide; a middle section 174 feet in length, open cribwork and a head block 100 feet long, 30 feet wide, close-faced cribwork. This wharf was vested in the Crown only a few years ago, and was in a bad state of repairs.

In the fiscal year 1902-03, the top planking, which was worn out, has been entirely renewed.

During the fiscal year 1903-04, the following works were performed : 25,000 feet B.M. of spruce deals, 4 inches thick, have been used in sheathing part of the face timbers damaged by ice; 8 mooring posts were renewed and 500 lineal feet of cap pieces have been replaced. The stringers of two platforms of 30 feet spans were renewed, and general repairs done to the shore end or approach.

These works were done by day-labour at the cost of $1,116.41.

ST. JÉRÔME.

St. Jerôme, Chicoutimi county, is a village situated on the south-east bank of Lake St. John, 24 miles east of Roberval ; besides the church, post office, telegraph and railway station, the parish contains several stores, 3 cheese factories and 2 saw-mills.

The wharf built at this place in 1899-1900 consists of an approach 75 feet in length, 25 feet in width and 15 feet in height, filled with ballast, sand, &c., two outer blocks 75 feet in length by 25 feet in width and 25 feet spans between, which are connected by stringers and planking. The total length of the wharf is 275 feet, planked over on its whole length.

Amount expended $4,999,28.

During the year 1900-01, an addition 400 feet long, 25 feet wide and 24 feet high was commenced.

Amount expended $6,933.90.

In 1901-02, the extension was completed.

Amount expended, $1,999.97.

During the year 1902-03, a block 60 feet in length by 25 feet wide and 27 feet in height, was sunk in 7 feet of water at low water, 110 feet from the present wharf, with the intention to connect this block by the construction of two piers and spans. The

block was built with a landing slip, and the head sheathed with 8-inch hardwoo and ballasted with stones.

Amount expended $2,595.20.

During the fiscal year 1903-04, two blocks of cribwork were built in t between the outer block and the wharf, the corbels and stringers 10 by 12 in two of the spans were laid and covered with 3-inch planks.

The amount expended was, $2,191.92.

Total amount of expenditure to July 1, 1904, $18,674.99.

ST. MARC DE COURNOYER.

St. Marc, is a post village and parish, in Vercheres county, on the Richeli 9 miles from Beloeil station, on the Grand Trunk Railway. It contains one Catholic church, 3 stores, 2 grist-mills and cheese factory. Population, 968.

In August, 1901, an old wharf, built by the citizens of the locality, situat two miles above the village, was given to the Crown free of charge, and the c tion of a new wharf, at that site, was commenced. It consists of a head block work, laid at the outer face of the old wharf; the new work has a length of by a width of 16 feet for 63 feet up stream, and a width of 32 feet for the re 24 feet ; at its upstream end, there is a close timber ice-breaker, 4 feet hig the flooring of the head block. The outer face of the head block is 16 feet h stands in 9 feet at low water.

The old wharf, which is used as an approach to the new one, has bee about 4 feet to the level of the floor of the head block, with stone and a layer and sand on top, the sides of the approach are rip-rapped and slope 1 in 1.

The work, carried out by day labour, was completed in June, 1902, at $3,245.67.

During the fiscal year 1903-04, a storehouse 16 x 20 feet was erected on th and the width of the stone approach was increased by 10 feet.

The work was completed in June, 1904, at a cost of $501.93.

Total expenditure on that work, $3,744.54.

ST. MATHIAS.

St. Mathias, is a post village and parish in Rouville county, on the R river. It contains a Roman Catholic church, 1 hotel, 2 stores, 1 saw-mill and factory. Population, 657.

In order to better accommodate the traffic carried out on the public wha in 1902-03, two storehouses were erected, one small and portable, 12 x 12 fee wharf, intended to be removed in the fall after the close of navigation, and in the spring after the floods ; and a larger and permanent one, 20 x 24 fee about 300 feet inland from the wharf, above the highest water mark.

The work was completed June 30, 1904. The expenditure during the fis was $480.31.

ST. MICHEL.

St. Michel, in the county of Bellechasse, lies on the south shore of the rence, fifteen miles below Quebec.

The site of the village is picturesque and the place is frequented as a sum sort. The coasting steamer 'Champion' calls there twice a day, giving good for the shipment of farm produce.

Spring tides rise 21 feet; neap tides, 13 feet.

Since 1900, heavy repairs have been done to this wharf, which is 1,100 fe 30 feet wide, with a headblock 50 x 40 feet.

During the fiscal year 1903-04, the repairs have been continued and the following works were performed: renewal of the face timbers for a length of 240 feet, on a mean height of 7 feet; one thousand feet of new cross-ties and longitudinals have been put in ; the top planking was renewed over a surface of 7,200 square feet ; the fenders and sheathing, on a length of about 200 feet, have also been replaced with new timber, the shed standing on the headblock, and all the mooring posts were painted. The expenditure amounting to $2,412.34.

Owing to the scouring of the bottom by the waves and current, the headblock had settled down and it became necessary to drive a row of sheet piles around its faces. During the month of May, 1904, 110 pieces of pitch pine, 10 x 12 inches, in lengths of 30 to 37 feet, were purchased; a pile driver was also constructed.

During the month of June, the driving of the piles was started, and at the close of the fiscal year, the work was progressing rapidly. The amount expended during the year was $5,442.47.

ST. NICHOLAS.

St. Nicholas, county of Lévis, is situated on the south shore of the St. Lawrence, fifteen miles above Quebec.

During the fiscal year 1903-04, the sum of $142.14, was expended in minor repairs to the wharf at this place.

ST. SIMÉON.

St. Siméon, is situated on the north shore of the St. Lawrence, in the county of Charlevoix, eighteen miles below Murray Bay.

During the fiscal year 1903-04, the sum of $2,992.20 was expended in the purchase of timber for the construction of an extension to the isolated pier towards the shore. It was decided afterwards to build the work by contract.

ST. VALENTIN, NOW ST. PAUL DE L'ILE AUX NOIX.

St. Paul de L'Ile aux Noix, is a post village and parish in St. John's county, on the River Richelieu, two miles from Scottsville, on the Grand Trunk Railway, and twelve miles south of the town of St. John's. It contains one Roman Catholic church, five stores, three hotels, one brick factory and telegraph office. Population, 614.

During May and June, 1904, the landing pier, built at that place in 1897 and 1898, was repaired. Corbels and stringers 6 x 12 inches, were placed between the existing ones which are 6 feet 4 inches apart on the piles approach and headblock of crib-work; three-fourths of the flooring was renewed, and a storehouse, 16 x 20 feet was erected on the wharf.

The work carried out by day labour, was completed June 30, 1904, at a cost of $1,158.15.

ST. ZOTIQUE.

St. Zotique, is a post village and parish, in Soulanges county, on the north shore of Lake St. François, two and a half miles west of Coteau Landing. The village contains one Roman Catholic church, two hotels, two stores and one telegraph office.

The wharf at that place consists of a headblock 132 feet 4 inches in length by 24 feet in width, while the approach, composed of thirty-four cribs, placed at intervals of 20 feet, varies from 8 to 12 feet in width.

During June, 1904, several stringers of the approach were renewed, and the flooring of the head block and approach were repaired.

The work was carried out by day labour at a cost of $509.01.

STE. ANNE DE LA PÉRADE.

Ste. Anne de la Perade, is a post village in Champlain county, on the
Anne and on the Canadian Pacific Railway, six miles from Batiscan, fifty
west by north of Quebec. It contains one Roman Catholic church, one mat
and one butter and seven cheese factories, two hotels and a dozen stores. P
village and parish, 2,550.

During the fiscal year 1903-04 repairs were made to the upper and lo
built in 1894 and 1895 and forming a system of protection against the co
erosions that have occurred at that place after the land slide at St. Albans
of dry stone, 10 feet wide at the base, 4 feet wide at the top and 4 feet high
on the western bank of the west channel, from the municipal iron bridge,
for a distance of 900 feet, to protect the buildings of that part of the villa
the shove of ice during the spring freshets. A dyke had been built of dr
the head of St. Ignace channel, to prevent the yearly erosions along the ban
channel, but was an inconvenience to the riparian owners who take their
water from the channel, in order to remedy this, a culvert 3 feet wide and
was made at the bottom of the dyke.

The work carried out by day labour was not completed June 30, 1904
The expenditure during the fiscal year was $3,000.

STE. ANNE DE LA POCATIÈRE.

The village of Ste. Anne de la Pocatière, in the county of Kamouraska,
on the south shore of the St. Lawrence, seventy-four miles below Quebec.

Spring tides rise 20 feet; neap, 12 feet.

The wharf at that place consists in an approach built of stone and earth
with twelve piers, 20 feet square, connected by platforms of 25 feet span.

During the winter of the year 1902, this wharf was almost totally destro
ice-shove. Five piers were carried away a distance of nearly 100 feet
damaged; of the seven others, two were much injured and had to be com
built ; the top planking was broken and scattered about.

In March, 1903, a sum of $70.15 was expended to gather and save the b
bers of the wharf.

The reconstruction began during the month of May, 1904, and at the c
fiscal year ended June 30, 1904, the work was progressing. One of the cribs,
not been too much damaged, was floated and put in place; the new cribs
built more substantially and of greater dimensions, being made 30 feet squa
of 20 feet. Nearly all the timber, necessary to complete the work, has be
and paid for.

The work was done by day labour at the cost of $4,280.70.

STE. ANNE DE SOREL.

The village of Ste. Anne de Sorel, in the county of Richelieu, is situa
south shore of the St. Lawrence at the head of Lake St. Peter, two miles be
In order to prevent the ice being carried on the low lands during spring fr
piers have been built in the vicinity of Ste. Anne and on Chenal du Moine c

During the fiscal year 1903-04, the ice pier opposite Sheppard's Mill wa
and raised 7 feet at a cost of $725.

At Ste. Anne de Sorel, a new pier, 20 by 24 feet, 15 feet high, was bu
property of Damase Lavallée, also a new one on Ile du Moine, to replace th
which was beyond repair. Another pier in this vicinity was repaired, at a
of $3,793.38.

On the west side of the Richelieu river a new pier was built, 20 by 24 fe
feet high, at a cost of $2,997.92, making a total expenditure, for the fiscal yea
of $7,834.13.

STE. ANNE DES MONTS.

The sum of $199.45 was expended towards the removal of 250 cubic yards of stones placed in cribwork 40 by 15 by 10 feet, built as a training pier, and to be used for the loading of small boats at the mouth of the little Ste. Anne river, county of Gaspé.

STE. ANNE DU SAGUENAY.

Ste. Anne du Saguenay, Chicoutimi county, is situated on the north shore of the Saguenay river, 72½ miles above Tadousac, and opposite the town of Chicoutimi. Its population is about 2,000. Besides the church and post office, the parish contains seven stores, four cheese factories, a lime-kiln, a brickyard, a pottery and a saw-mill. The only market for the produce of the farms of this section of the north shore of the river is Chicoutimi.

Spring tides rise 17 feet; neaps, 9 feet.

Construction.—As early as 1879, the Dominion government was urged to construct a landing pier for the accommodation of the inhabitants of the district. The request was not, however, considered until 1888, when a portion of the timber for the proposed structure was purchased at a cost of $2,100.

In 1889, the pier was commenced from shore outward, and at the close of the year 1888-1889, a portion 77 feet long and 30 feet wide on its lower or eastern face had been completed at a cost of $2,109.60. It was built of close-faced cribwork, filled with stone ballast. In 1890 this shore block was extended 87 feet on a width of 27 feet, at a cost of $2,045.50, and in 1891, a further length of 50 feet of similar work was built at an additional cost of $2,498.96.

In 1892, a headblock 30 feet long, 60 feet wide and 20 feet high was built at a distance of 250 feet from the end of the work, completed the previous year, at a cost of $2,262.11, and in 1896 this block was raised 8½ feet and put on the same level as that of the work built out from shore, viz., 6 feet above ordinary high water spring tides.

With a view of completing the pier to shore, a sum of $5,575.25 was expended in 1897 for the construction of two cribs, each 87½ feet long, and 25 feet wide, placed 25 feet apart and 25 feet from both the head and shore blocks.

During the year 1898, the three 25-foot openings left in the work were spanned, the flooring was laid and the structure completed to shore at a cost of $746.70. The pier is now 494 feet long, 39 feet wide for the first 95 feet from shore, 27 feet wide for the following 119 feet, 25 feet wide for the next 250 feet, and finally 60 feet wide for the last 30 feet. It is 28½ feet high above the bottom of the river, at its outer end, and stands in 7½ feet of water at low water spring tides. It is substantially built throughout of close-faced cribwork filled with stone ballast. Some boulders were removed in 1894 from the vicinity of the head of the pier at a cost of $99.30.

During the whole season of navigation a steamboat performs a regular ferry service every hour from Ste. Anne to Chicoutimi.

During the year 1899, the planking of that part of the pier constructed in 1888 was renewed over a length of 250 feet, the sides of the cribs built in 1897 were sheathed on a length of 200 feet and fenders were placed at the angles.

The work was done by day-labour, at a cost of $1,099.81.

During the year 1900, the outer block for 110 feet was sheathed with tamarack, about 300 feet of the planking was renewed with 3-inch tamarack at a cost of $1,499.99.

During the year 1901, the sum of $2,507.36 was expended in renewing the planking of the wharf over a length of 240 feet and a width of 25 feet. The upper side of the wharf was sheathed over a length of 110 feet, with 6-inch tamarack,and a shed, 45 feet by 30 feet, was also erected on the wharf.

During the year 1901-02, a crib 40 feet wide and 27 feet high, was constructed at the eastern extremity of the wharf. It is fully sheathed with 5-inch tamarack. The flooring of the wharf was renewed on a space 200 feet long and 27 feet wide.

Expenditure, $3,102.07.

During the fiscal year 1902-03 a movable slip was built, a wating-room menced, the flooring of the wharf was renewed at different places.

Expenditure, $1,523.30.

The wharf stands to-day 475 feet in length, 30 feet wide for the first 130 shore, 27 feet wide for the next 325 feet, and finally 100 feet for the last 30 length, it stands 28½ feet high above the bottom of the river at its out 7½ feet of water at low water spring tides.

The wharf has a return on the western side of the shore end 120 feet 32 feet wide, which reaches the rock bank of the river.

During the fiscal year 1903-04, the shed was covered with sheet iron, th room was completed, a freight shed was built, and the flooring was repaire

Amount expended during the year $1,101.80.

Total expenditure to July 1, 1904, $29,124.26.

STE. EMILIE.

Ste-Emilie, county of Lotbinière, is on the south shore of the St. Law

During the fiscal year 1903-04, the sum of $156.87 was expended in b trestle roadway from shore to the isolated block, on which a small shed 12 b was also built.

STE. FAMILLE, ISLAND OF ORLEANS.

Ste. Famille, is situated on the north shore of the island of Orleans, in t of Montmorency.

On May 28, 1904, a contract was awarded for the sum of $17,664 for the tion of an extension to the wharf at this place.

The structure is 200 feet long, 30 feet wide and 21 feet high at the out

At the end of the fiscal year 1903-04, the work was progressing, the am to the contractors was $3,704.85.

STE. GENEVIÈVE.

Ste. Geneviève, is an incorporated village in Jacques Cartier county, o des Prairies, three miles from Beaconsfield, the railway station, and five n Pointe Claire. The village contains one Roman Catholic church, one convent, mercial college, two hotels, butter and cheese factories, one telegraph office teen stores. There are excellent mineral springs in the vicinity.

Population, 1,186.

During the fiscal year 1903-04 the following repairs were made to the p place ; the two top tiers of timber of the three cribs and abutment were re x 12-inch post was placed inside the down stream corners of each crib and every piece of the face timber with screw bolts ; the wooden stringers were r three 18-inch I-steel beams with three rows of channel iron between, and 6-in beams laid across every three feet and secured to the main beams ; new f 3-inch pine deals was laid diagonally and an iron guard railing was place sides.

The work carried out by day labour was completed on June 30, 1904, a $2,492.94.

SHIGAWAKE.

Shigawake is a post village on the north shore of Baie des Chaleurs, in t of Bonaventure.

During the year 1903-04, construction timber and ballast stone were for the sum of $2,818.02. The work is to be done by day labour.

SOREL.

At the beginning of the fiscal year, viz., July, 1903, the crib superstructure was lmost completed as well as the bents of the pile wharf, so that the work remaining esides the dredging was mostly to finish loading the cribs with stone and forming he earth embankment at the rear of the wharf. This progressed favourably, the naterial for filling being taken from the excavation.

Three dredges were at work part of the autumn and the excavating of the whole pace along the new dock, to deep water (30 feet) was completed on November 13, 1903. The rip-rap revetment was laid along the slope at the rear of the earth embankment xcept about 50 feet in length at the south-east angle.

Thirty anchor tie-rods were laid in trenches to stay the pile wharf and resist the utward pressure of the sand against the framed structure. They are fastened by olts to the post at the rear of the bents, and the other end is held in place by a heavy ut tightened against two cross pieces of channel iron, and a plank pannel buried in he sand.

In the spring of 1904, the stone filling of the cribs was completed and the earth lling levelled and made ready for the stone revetment. At the end of June the work emaining to be done consisted of the cast-iron mooring posts to be planted in concrete orms, and the stone surfacing over the whole of the wharf. The amount expended uring the fiscal year 1903-04 was $44,224.75.

TADOUSAC—FISH HATCHERY.

During the fiscal year 1902-03 the dam of the fish pond was extended a further ngth of 60 feet, and the old portion sheathed with tamarack deals, the plank walk om the wharf to the pond, and a small kiosk built on a pier sunk in the pond, gether with a plank approach thereto, the sum of $928.62 was expended.

During the fiscal year 1903-04, the kiosk was painted, and the dam was sheathed side.

Amount expended $371.73.

Total amount of expenditure $1,297.11.

TADOUSAC WHARF.

Tadousac, or l'Anse à l'Eau, the chef-lieu of the county of Saguenay, is a water- g place on the north-eastern side of the Saguenay river, about 5 miles above its outh, which is much frequented by tourists and health seekers during the summer ason. The village contains three churches, one of which is the oldest church built Canada, having been erected in 1747, four hotels and stores, a telegraph office and any handsome villas, a fish hatchery has also been erected here by the Department Marine and Fisheries.

Some 50 years ago, or more, the lumbering firm of Price Brothers & Co., of hicoutimi, built at L'Anse à l'Eau, which constitutes the harbour of Tadousac, a harf for their own use and convenience, of round logs and slabs, and partly faced he same with square timber and ballasted the work with stone. This wharf had a tal length of 366 feet and a general width of 26 feet excepting a block at the west nd which measured 4 feet by 50 feet by 29 feet in height, the depth available along s outer face at lowest water being about 7½ feet. In the absence of any other land- g this wharf was not used alone by the firm who built it, but was also taken advan- ge of by the Richelieu and Ontario Navigation Company, as well as the general ublic.

The structure having become too dilapidated to be of further service for the ublic the federal government decided in 1880 to carry out the works of repairs re- uired, to permit of the wharf being used for general shipping and landing purposes

as in previous years. Accordingly, in 1887-88 and 1888-89 the whole whar 3 feet, and a new plank floor put on throughout, a new inclined slip wa In 1889-90 a block 30 by 30 by 43 feet in height, was sunk 30 feet to the the main structure, and in the following year the two blocks were con timber span 30 by 30 feet, and in 1893-94 a new roadway or approach to th the upland or embankment of earth 525 feet long by 25 feet wide was bu

The wharf as completed in 1894, has a total length of 225 feet on channel face, and is 108 feet wide for 165 feet in length at the eastern feet for the remaining 60 feet at the western end.

By a deed of sale dated December 10, 1896, Messrs. Price Brothers conveyed to the federal government all their rights and interest to the wh land on which it stands, as also to the roads and approaches thereto, for one dollar ; reserving however, the right of using in perpetuity a portion 35 feet by 25 feet for the purpose of piling firewood thereon and the right the wharf in perpetuity, to land, or ship merchandise as they may requ with steamers, schooners or other crafts.

During the fiscal year ended June 30, 1897, a combined shelter and waiting room, covering an area of 60 by 30 feet was erected close to the southern side of the wharf, and this face has been sheathed with 5-inch t a length of 160 feet ; moreover the hand rails on the approach have bee

Expenditure incurred in 1896-97, $1,474.93.

During the year 1902-03 the roadway of the approach was repaired, th of the two western corners of the wharf were renewed with hardwood t shed repaired and painted.

Expenditure $1,062.10.

During the fiscal year 1903-04, the wharf which had been broken by 'Virginia' was repaired.

Amount expended, $100.

Total expenditure to June 30, 1904, $19,480.34.

Spring tides rise 17 feet, neaps, 10 feet.

THREE LAKES.

Lake Megantic is about seventy-three miles south-east of Sherbroo twelves miles ; average breadth, two to four miles, with a coast line of six miles. This lake and the rivers that run into it form the head w Chaudière river.

In 1885 a wharf was built at a point called Three Lakes or Flint's.

During May and June, 1904, the head of the wharf, which had been the ice, was repaired; the whole wharf was raised 2 feet, fully ballasted an gravel put on top, the road from the wharf was partly raised and imp small waiting-room was erected on the wharf. The work carried out by was completed June 30, 1904.

The expenditure during the fiscal year was $731.88.

TICOUABÉ

Ticouabé, or St. Méthode, a post village in Chicoutimi county, is sit outlet of the river of the same name, twenty-one miles from Roberval.

A small landing was built at this place during the year 1897-98 to the local trade and to help its development. The wharf consists of a s close-faced cribwork 30 x 30 feet, built a small distance from the shore a to it by a platform, supported on trestles, 103 feet long and 25 feet wide, freight and shelter shed, 25 feet by 30 feet was also built.

Amount expended, $1,611.79.

In the spring of the year 1902-03, the wharf was badly damaged by ice.

During the fiscal year 1903-04 the trestles were renewed and the space between the trestles being too large their number was increased and corbels were put on to support the floor-stringers. The outer pier of the wharf was levelled and to prevent any sinkage and give it more strength the head was surrounded with pile-work.

Amount expended, $792.08.

Total amount of expenditure, $2,522.64.

TROIS PISTOLES.

Trois Pistoles in the county of Temiscouata, is an important village on the Intercolonial Railway, twenty-five miles below River du Loup. The land in the vicinity is fertile and the place is flourishing. It is somewhat frequented as a summer resort. Along the River Trois Pistoles, stand large saw-mills and a pulp-mill. Spring tides rise 18 feet ; neaps, 10 feet.

The harbour being much exposed to north and north-easterly winds, navigators were complaining of want of proper shelter for their craft ; it was decided to build a breakwater across the entrance of the harbour. During the month of May, 1904, the work was commenced. It consists of a crib 250 feet in length, 20 feet wide at the base, with a batter of 1 in 12 on the sides, to be built to a height of 14 feet ; advantage has been taken of a high bottom for the site of the breakwater which will stand about 2 feet above high water mark when completed.

At the close of the fiscal year, about two-thirds of the structure was built ; the work was done by day labour and the expenditure was $5,045.44.

A considerable quantity of materials, timber and iron, are now on hand and have been paid for out of that amount.

VERCHÈRES.

Verchères, is a post village and parish in Verchères county, on the south shore of the St. Lawrence river, and on the South Shore Railway, 21 miles from Montreal. It contains 1 Roman Catholic church, 4 stores, 1 hotel, 2 saw-mills and 1 butter factory. Population, 1,689.

The Richelieu and Ontario Navigation Company, has a small wharf at Verchères, but it being private property and inadequate for the requirements of the traffic, specially for the large shipments of hay, it was decided to build a public wharf.

The wharf consists of a head block of pilework 96 feet 6 inches long, by a width of 40 feet 4 inches, a pilework approach on a length of 224 feet by a width of 20 feet, and a stone embankment 300 feet long, by a width of 20 feet at the top with slopes of 1 in 1 on both sides.

The work, carried out by day labour, was commenced in November, 1903. It was suspended during the winter and continued in May, 1904 ; it was well under way at the end of the fiscal year.

The expenditure on the work to June 30, 1904, was $5,228.

PROVINCE OF ONTARIO.

BARRIE.

Barrie is situated in the county of Simcoe, 66 miles north-west from Toronto, on Kempenfeldt bay, Lake Simcoe, population 5,600.

At the session of parliament of 1903, the sum of $3,000 was re-voted for the construction of a wharf at this place, and on August 5, the same year, orders were given to proceed with the work by day labour.

The work consists in building a pile trestle wharf at the foot of B
200 feet in length and 20 feet in width. Plans and specifications were
work commenced on August 7, 1903, and completed on January 31, 190
In doing the above work, some 110 piles ; 6,067 f.b.m. hemlock ;
pine ; 20,640 f.b.m. cedar were used.
Expenditure for fiscal year, 1903-04 :

Labour and superintendence	$1,5
Materials	1,7
	$3,2

BAYFIELD.

Bayfield, a village in the county of Huron, is situated at the mouth
of the same name, which empties into Lake Huron, 12 miles south o
Goderich. It contains one grist and saw-mill.
At the last session of parliament, the sum of $5,000 was appropr
plete the extension of the southern pier at this place, for which a contr
to Mr. James Clark of Goderich, on November 27, 1901, for the sum
construct the extension 120 feet in length and 30 feet wide, and to dre
the cribs to 16 feet below low water.
Work was commenced in July, 1902, and the two cribs were placed
the fall of the same year, with the result that they were both, more or l
by the fall and winter storms. Operations were not commenced agai
last, 1903, and the work completed in December the same year.
Dredging to the extent of an expenditure of $2,000 was ordered
1903, to be performed by the Marlton Dredging Co.
Expenditure for fiscal year, 1903-4 :—

To paid James Clark, amount of contract, $6,440, less one foot in height, not constructed	$6,7
To paid, inspection	3
	$9,1

BLIND RIVER.

Blind River is a village situated on the north channel, Lake Huro
trict of Algoma. It is a station on the Canadian Pacific Railway. E
bering operations are carried on at this place.
At the session of parliament of 1903, the sum of $9,000 was approp
balance of contract for the construction of a wharf at this place, which
let to Mr. Robert Grant on February 11, 1903, and completed on August
year.
On November 10, 1903, the sum of $3,000 was authorized for the co
a headblock, 100 feet by 30 feet, by day labour, which was completed in
Expenditure for fiscal year 1903-04:—

Labour and superintendence	$1,21
Materials	1,69
	$2,90
To paid, Robert Grant, balance of contract	$4,51

BOWMANVILLE.

Bowmanville, or Port Darlington, is situated on the north shore of Lake Ontario, county of Durham, forty-three miles from Toronto by rail on the Grand Trunk division of the main line between Toronto and Montreal. Population, 3,500.

At the session of parliament of 1903, the sum of $1,000 was appropriated to complete repairs to the breakwater at this place, and on August 5, the same year, authority was given to expend the amount by day labour.

Work was commenced on August 19, and completed on September 28, and consisted in filling in the breakwater with stone ballast, and repairing the main pier.

In doing the above work, some 12,250 f.b.m. pine, 10,610 f.b.m. 3-inch pine plank, 25½ toise of stone and 500 pounds iron were used.

Expenditure for fiscal year 1903-04 :—

Labour and superintendence	$ 257 49
Materials	742 51
	$1,000 00

BRACEBRIDGE.

Bracebridge is situated on the north branch of the Muskoka river, county of Victoria, 125 miles north of Toronto. Population, 2,000.

At the session of parliament of 1903, the sum of $5,800, was appropriated for the construction of a wharf at this place, and orders were issued on November 26 last, to prepare contract plans and specifications for same, but owing to a change in location, this work has been delayed.

BRONTE.

Bronte is situated in the county of Halton, on the north shore of Lake Ontario, 27 miles south-east of Toronto.

At the session of parliament of 1903, the sum of $2,700 and $6,300 was appropriated for harbour improvements at this place, and on August 5, authority was given to expend the sum of $1,500, and on November 9, authority was given to expend $6,300 by day labour.

The work consists in the construction of 150 lineal feet of pilework, and two cribs, 50 x 24 x 13 feet, and renewing the superstructure 110 feet in length by 24 feet in width, the raising of the superstructure one foot in height for a distance of 40 feet, and placing a life chain, 450 feet in length, in position.

In doing the above work, some 77,881 f.b.m. hemlock; 50,710 f.b.m. pine ; 7,760 f.b.m. elm ; 110 cedar piles and 3,247 lbs. iron were used.

Expenditure for fiscal year, 1903-4 :—

Labour and superintendence	$1,316 09
Materials	4,823 19
	$6,139 28

BURK'S FALLS.

Burk's Falls is situated in the district of Parry Sound, on the Magnetawan river, and is a station on the Grand Trunk Railway, Northern Division. Population, 1,500.

At the session of parliament of 1903, the sum of $4,000 was appropriated to settle with Mr. David Conroy, who contracted on January 2, 1903, to build a wharf at this place, of pile trestle work, 300 feet in length, and 25 feet wide for the sum of $5,400, and for which the sum of $4,500 had been appropriated in 1902-3. The structure was completed on August 11 last.

Expenditure for fiscal year, 1903-4 :—

To paid Mr. Conroy, balance of contract..... $9

Mr. Conroy was paid on progress estimates before June 13, 1903, $4,5(

Authority was given to erect a warehouse, and the work was perfor Magnetawan Tanning and Electric Co., for the lump sum of $500. Thi completed June 24.

Expenditure during the fiscal year 1903-04, $1,780.75.

BURLINGTON CHANNEL.

Burlington channel in the county of Wentworth, is simply a cut throu of low land which partly separates Lake Ontario from a large sheet of w Burlington bay, enabling vessels to reach the wharf at the city of Hamil sides of the channel are lined with piers.

At the session of parliament of 1903, the sum of $60,000 was appr complete the repairs and the work of renewal of the superstructure at thi

On October 19, 1901, a contract was let to Mr. James Clark, of Go $96,700 to reconstruct the superstructure of the west end of the south p protect the channel sides of both piers with sheet piling. The time for was extended to December 30, 1903 and again to July, 1904.

A dredge was employed from September 15 to November 14, remov obstructing the driving of the piling, and day labour was also employed t stone behind the sheet piling.

Up to June 30, 1904, 5,140 feet (lineal) of sheet piling has been driv lineal feet of superstructure has been rebuilt.

The swing bridge staff were employed from July 1 to December 19 lights were put out, and navigation ceased for the winter, opening again o 1904, when they resumed duty.

Expenditure for fiscal year, 1903-04 :—

To paid	James Clark, progress estimates.....	$52,773
"	Assistant Engineer and Inspector, (wages &c.)	2,978
"	wages of working staff on bridge.....	1,702
"	maintenance of bridge and supplies.....	1,445
		$58,300

CHRISTIAN ISLAND.

Christian island is situated in Georgian bay, county of Simcoe, an from Penetanguishene, the nearest railway point, about twenty-six miles. habitants are chiefly Indians, as this is an Indian reserve. Cordwood expo fishing are the chief industries.

At the session of parliament of 1903, the sum of $400 was appropriated to the wharf on the Indian reserve at this place, and on November 9, the instructions were given to proceed with the work of repairs to the presen built by the Indian Department. Work commenced on February 13, an pleted on May 6, 1904.

Expenditure for fiscal year 1903-04 :—

Labour and superintendence.....	$359
Materials.....	40
	$400

COBOURG.

Cobourg is an incorporated town, in Northumberland county, situated on the north shore of Lake Ontario, on the Grand Trunk Railway, ninety-two miles west by south of Kingston, sixty-nine miles north-east of Toronto, and is a port of entry. It has several mills, foundries, breweries and a car factory. Population, 4,239.

At the session of parliament of 1903, the sum of $2,500 was appropriated for repairs to piers and dredging at this place, and on August 5, the same year, authority was given to expend the amount by day labour.

Work was commenced on August 14, and consisted in replanking the 'Langevin' pier, a length of 450 feet, 29 feet wide; renewing 150 feet of the east pier with stringers and planking 16 feet wide; the north-east corner of the east pier rebuilt from low water up, 100 feet in length, and 12 feet wide, and filled with stone, also repairing under the Customs warehouse with cross timbers and flooring.

In doing the above work, some 50,971 feet board measure pine; 27,550 feet board measure pine plank; 83,246 feet board measure cedar and 6,485 pounds iron were used.

Expenditure for fiscal year, 1903-04 :—

Labour and superintendence	$1,484 50
Materials	3,515 49
	$4,999 99

COLLINGWOOD.

Collingwood is situated on the south side of the Georgian bay, township of Nottawasaga, county of Simcoe, ninety-four miles by railway from Toronto. It is the terminus of the Northern and Hamilton and North-western Railways. There is an extensive trade in ship-building, grain and lumber, and it is the starting point of steamers for Owen Sound, Sault Ste. Marie, Parry Sound, &c. Population, 9,000.

As constituted now, the harbour is very large and commodious, being protected on the north and east sides by extensive breakwaters. Several small wharfs belonging to the town, or to companies, are built inside the area inclosed by these breakwaters.

At the session of parliament of 1903, the sum of $60,000 was appropriated for improvement in Collingwood harbour, and on September 14, the same year an agreement was entered into with Mr. C. S. Boone, to increase the width of the channel to 220 feet through the harbour, with an entrance at lake end of 300 feet, and to give a depth throughout of 20 feet at low water, to be paid for at the following rates (in situ) viz.: mud, 35 cents; hard pan, $1.40; rock, $2.30 per cubic yard. The agreement to be considered as a continuation of the work Mr. Boone had already performed, under contract in the harbour.

Work was commenced August 24, 1903, operations being suspended for the winter on December 5, up to which date the plant had removed, on continuation agreement, 12,403 cubic yards mud; 6,825 cubic yards hard pan and 500 cubic yards of rock. Work recommenced on May 4, and up to June 30, 1904, worked 528½ hours removing 4,001 cubic yards, and 10,621 cubic yards hard pan.

Expenditure for fiscal year, 1903-04 :—

Paid C. S. Boone, on dredging (continuation agreement)	$54,542 10
" " work in front of dry dock	10,245 60
" inspection	623 95
	$65,411 65

DEPOT HARBOUR.

Deport Harbour, is situated on the north-east shore of Georgian ba district of Muskoka, 60 miles north of Collingwood, and about 3 miles by w Parry Sound. It is the western terminus of the Canada Atlantic Railwa and was selected by this railway company as a point of transhipment of from the west ; it is distant from Ottawa, 263 miles by rail. In connection harbour the railway company operates between Chicago, Milwaukee, Du Depot Harbour a fleet of large steel steamers of 4,000 to 7,000 tons each, wh return trips every week. It is a splendid natural harbour, three-eights of width, deep enough to accommodate the largest steamers on the lakes ; the is sheltered by Supply island which lies about one mile to the westward.

The Canada Atlantic Railway Company has built two wharfs, one on of the harbour, of a total length of 3,000 feet with 22 feet of water at the elevator of 1,250,000 bushels capacity ; two freight sheds, each 700 feet lo feet wide, with double tracks in the rear.

In 1900, the railway company applied for aid, to the amount of $200,00 the construction of further harbour improvements required for the increas of the harbour.

In May, 1902, a contract was awarded to Messrs. Davis, Haney & Mill construction of an additional length of 1,250 feet to the elevator dock on th side of the harbour, towards Supply island, the contract price being $195,0

During the fiscal year 1902-03, at the request of the Canada Atlantic Company, the general lines of the works were changed, instead of buildin tension 1,250 feet long and 60 feet wide, it was decided to build it 525 feet 80 feet wide, and to construct a landing wharf, 400 feet long and 150 fee the inner end of the harbour.

These changes were accepted by the contractors at the original contr At the end of the fiscal year 1902-03, construction had not been commenced.

The extension consists of close-faced timber cribwork walls on the sides end, with stone filling between and of an average height of 33 feet, to 7 f extreme low water, the cribs rest on an artificial stone foundation. The top i with broken stone in the middle and on the sides and outer end, for a width it is planked over with 3-inch deals.

The landing pier, 400 feet long, consists of two lines of close-faced tin sunk at a distance of 150 feet between their outer faces, and one crib at the closes the space between the side cribs, the top of the crib standing one f low water, they are to be filled with stone and between them the filling is to sand. The superstructure is to be built continuously to a height of 7 feet water.

At the end of the fiscal year 1903-04, the extension to the elevator w nearly completed, and all the cribs of the landing pier, but one, were sunk a filled.

In February, 1904, the contractors agreed to build the superstructure of ing pier with concrete instead of timber, without any increase in the contr

The amount expended during the fiscal year 1903-04, was $106,134.11.

GODERICH.

Goderich, in the county of Huron, is situated on the east shore of Lak at the mouth of the River Maitland about sixty-eight miles from Sarnia, miles from London.

It is the terminus of the Buffalo branch of the Grand Trunk Railway, a of considerable importance.

At the session of parliament of 1903, the sum of $20,000 was appropriated towards the construction of a breakwater off the entrance of the harbour at this place. Plans and specifications were prepared, and tenders are now being called for.

Soundings and borings were taken for the proposed breakwater, for which the following amounts were expended.

Expenditure for the fiscal year, 1903-04, $18,817.73.

GORE'S LANDING.

Gore's Landing is a small village of some 100 inhabitants, and is situated in the County of Northumberland, on the south shore of Rice lake, twelve miles from Cobourg.

At the session of parliament of 1903, the sum of $3,000 was appropriated for the construction of a wharf at this place, and on October 30, the same year, authority was given to do the work by day labour.

The work consisted in the construction of a pile wharf, 190 feet long with an 'L' end of 73 feet, the width varying from 70 feet at the shore end to 28½ feet at the outer end. The whole interior of the structure being filled with stone.

In doing the above work, some 423 oak piles; 108 cords of stone, 2,390 feet board measure 3-inch pine plank, 960 f.b.m. pine and 4,335 pounds iron were used.

Expenditure for fiscal year, 1903-04 :—

Labour and superintendence	$1,791 56
Materials	1,140 49
	$2,932 05

GRAND BEND.

Grand Bend is a village on the east shore of Lake Huron, about forty miles south of Goderich.

At the session of parliament of 1903, the sum of $5,000 was appropriated for the construction of a breakwater pier and dredging a channel at this place, and on November 12, the same year, orders were given to prepare contract plans and specifications.

A contract was let to Mr. John D. Warwick, on March 26, 1904, for the sum of $21,388, for the construction of the wharf.

Expenditure during fiscal year 1903-04, $298.64.

GRAND RIVER.

Dunnville is a town on the Grand river, in the county of Haldimand, five miles from Lake Erie.

On July 13, 1903, authority was given to engage the plant of Mr. C. S. Boone, to do the necessary dredging of the bar at the entrance to the Grand river, and also in the river at Dunnville, the terms being $12 per hour, removing 80 cubic yards per hour, and to June 30, the plant removed 130,252 cubic yards.

Expenditure for fiscal year, 1903-04 :—

To paid C. S. Boone, dredging	$ 9,634 00
" towage from Sarnia	533 00
" inspection	470 40
	$ 10,631 40

GRAND RIVER BRIDGE.

Grand River bridge is situated at the village of York, in the county of I five miles from Caledonia, the nearest railway point.

On May 28, 1903, authority was given to expend the sum of $150 in pairs to the embankment approaches to the bridge at this place, and the work was done in August last, and consisted in repairing the washout of t ment, caused by the heavy rains in the spring.

In doing the above work some eighteen cords of stone, 97 cubic yard and 327 lineal feet of 3-inch pine plank were used.

Expenditure for fiscal year, 1903-04 :—

To paid, repairs	$	173
" caretaker (one year's salary)		25
	$	198

HAILEYBURY.

Haileybury, a post village in Nipissing county, is situated on the we Lake Temiscamingue, near the entrance into Wabi bay.

In the fiscal year 1900-01 the building of a wharf was commenced to date the local trade.

No work was done on this structure during the fiscal year 1901-02.

During the fiscal year 1902-03, work on the wharf was commenced progress made with the construction of the approach.

During the fiscal year 1903-04 a close-pile head 40 x 60 feet dimen stone filling was built to a height of 7 feet above low water level, incor smaller crib 20 x 30 feet dimensions, which had been sunk in 10 feet of v earlier date.

The stone approach which is 500 feet long and 18 feet wide on top wa materially, but was not completed to its full height.

Expenditure for fiscal year 1903-04, $8,842.18.

Total expenditure to June 30, 1904 is $13,370.48.

HAWKESTONE.

Hawkestone is a small village on the north shore of Lake Simcoe, dist miles north-east of Barrie.

Authority was given on January 15, 1904, to expend the sum of $200 to the pier at this place. Work commenced on April 5, and consisted in re decking of wharf.

Expenditure for fiscal year 1903-04 :—

Labour and superintendence	$	151
Materials		33
	$	184 8

HIAWATHA.

Hiawatha is the name of the Indian village on the Mississaga Indian r in the township of Otonabee, about 12 miles south of Peterborough, and 15 m of Cobourg.

On December 29, 1903, orders were given to expend the sum of $300 the stone from the old pier at Hiawatha, and $1,200 to construct a landi day labour.

The work consists of a timber wharf made up of cribs and spaces, t three cribs, 16 x 20 feet, giving a total length of 84 feet. A road appro wharf was constructed 84 feet in length, 20 feet in width and 6 feet deep.

In doing the above work, some 12,192 feet board measure pine, 2,500 feet board measure hemlock, and 833 pounds iron were used.

Total expenditure for fiscal year 1903-04 :—

Labour and superintendence	$ 876 85
Materials	151 65
	$1,038 50

HILTON.

Hilton is a small village situated on St. Joseph's island, on the north channel of Georgian bay.

On August 13, 1903, authority was given to expend the sum of $40 in repairs to the wharf at this place.

In doing the above work, some 3,325 feet board measure pine plank were used.

Expenditure for fiscal year 1903-04 : Materials, $39.90.

HONORA.

Honora is a village on the east shore of Manitoulin island, district of Algoma, and is distant about twenty miles from Little Current.

At the session of parliament of 1903, the sum of $4,000 was appropriated for the construction of a wharf at this place, and on November 12 last, instructions were given to prepare contract plans and specifications, which was done and tenders called for.

The contract was let to Messrs. D. Porter and G. Kastner, on February 22, 1904, for $7,900.

KINCARDINE.

Kincardine, in the county of Huron, is situated at the mouth of the Penetangore river, which empties into Lake Huron, 31 miles south of Southampton. It is the terminus of the Wellington, Grey and Bruce division of the Grand Trunk Railway. Extensive salt deposits are found here.

At the session of parliament of 1903, the sum of $3,000 was appropriated for repairs to the piers and dredging at this place, and on July 18 last, orders were given to employ the Marlton Dredging Company's plant of Goderich to do what was required. Operations were commenced on September 22, 1903, and continued until November 4, during which time the plant worked 225½ hours, and removed 17,460 cubic yards.

On July 13, 1903, instructions were given to make the necessary repairs to the piers by day labour.

In doing the above work, some 950 feet board measure oak and 5,000 feet board measure hemlock plank were used.

Expenditure for fiscal year 1903-04 :—

Labour and superintendence		$ 634 16
Materials		363 99
		$ 998 15
To paid Marlton Dredging Co.		$1,804 00
" " "	towage	142 00
"	inspection	144 00
		3,088 15

KINGSVILLE.

Kingsville, county of Essex, on the north shore of Lake Erie, about east of the mouth of the Detroit river, on the Essex and Lake Erie Railway. tion, 1,600.

At the session of parliament of 1903, the sum of $4,000 was approp filling the superstructure of the extension of the breakwater with stone bs on November 9, 1903, orders were given to do the stone filling by day lab the expenditure of $1,000 and the balance being for the required dredgin no plant was available, the dredging was not performed.

In doing the above work, some 72 cords of stone were used.

Expenditure for fiscal year 1903-04 :—

Labour and superintendence	$652 6
Materials	346 3
	$998 9

LAKEPORT.

Lakeport, the port of Colborne, is situated in the west riding of the Northumberland, 14 miles east of Cobourg.

At the session of parliament of 1903, the sum of $3,500 was approp repairs to the wharf at this place, and on October 30, the same year, autl given to proceed with the work by day labour.

In doing the above work, some 14,338 feet board measure pine plank ; board measure hemlock ; 50 feet board measure oak ; 53,492 feet boar cedar ; 24 cords stone, and 8,237 pounds, iron were used.

Expenditure for fiscal year 1903-04 :—

Labour and superintendence	$ 963 2
Materials	2,061 7
	$3,024 9

LANCASTER.

Lancaster, a post village in Glengarry county, on the River St. Lawren miles east of Cornwall and on the Grand Trunk Railway, fifty-four mil Montreal. Lancaster is a landing place of the Cornwall and Montreal stea contains four churches, three hotels, fifteen stores, one iron foundry, one telegraph and telephone agencies and one printing office issuing a weekly Population, 583.

During the month of October, 1903, the sum of $98.83 was expended to repairs to the stone approach of the public wharf at that place.

LEAMINGTON.

Leamington, is a village in the county of Essex, on Lake Erie, thirty-s from Windsor.

At the session of parliament of 1903, the sum of $3,800 was appropriate tection sheet piling, &c., to the wharf at this place. Orders were given on 9, to proceed with the work by day labour.

In doing the above work, some 47,772 feet board measure pine, 75 feet b sure oak, and 9,929 pounds iron were used.

Expenditure for fiscal year 1903-04 :—

Labour and superintendence	$2,368 40
Materials	1,365 25
	$3,733 65

LITTLE BEAR CREEK.

Little Bear Creek is in the counties of Kent and Bothwell, and empties into the 'Chenal Ecarte,' Lake St. Clair, about sixteen miles from Chatham.

At the session of parliament of 1903, the sum of $2,000 was appropriated for dredging at this place, and on October 14 last, orders were given to employ the Chatham Dredging Company's plant to do the work required.

The work consisted in giving a depth of 7½ feet through the navigable portion of the creek; about half mile of dredging was done, and some 21,600 cubic yards of material were removed. The plant worked from November 4 to December 1, 1903, and from April 7 to April 12, 1904.

Expenditure for fiscal year, 1903-04 :—

To paid Chatham Dredging Co	$1,720 00
" inspection	90 00
	$1,810 00

L'ORIGINAL.

L'Orignal, the chef-lieu of the county of Prescott, on the south shore of the Ottawa river, and sixty-six miles west of Montreal. It contains, besides the county buildings, four churches, Roman Catholic, Presbyterian, Episcopalian and Methodist, telegraph office, several insurance agencies, grist and saw-mills, five stores and two hotels. Two weekly newspapers are published in L'Original. Population, 1,026.

The public wharf at L'Original, rebuilt in 1898 to 1900 at a cost of $28,294.60, is one of the most important on the River Ottawa.

During April, 1904, the floor of the trestle approach, 700 feet long, has been redoubled with 3-inch pine planks, the roof of the freight shed has been repaired and the stone embankment 623 feet long, has been repaired and regravelled.

The work was carried out by day labour at a cost og $974.52.

MCCRACKEN'S LANDING.

McCrackens' Landing is situated on the south shore of Stony lake, in the county of Peterborough, and is distant twelve miles north-easterly from Lakefield on the Trent Valley system.

On December 20, 1903, orders were given to construct a wharf at this place by day labour, the sum of $900 being authorized for same.

The work consists in the construction of a new crib wharf 30 feet square, nine feet in depth, planked on top, sheeted all round with 2-inch hemlock planks and filled with stone.

An approach leading to this wharf, 72 feet long, with an average depth of 4 feet and 20 feet wide on top, was also built.

In doing the above work, some 9,292 feet board measure hemlock, 3,456 feet board measure, cedar, 69¾ cords stone and 541 pounds iron were used.

Expenditure for fiscal year, 1903-04 :—

Labour and superintendence	$379 50
Materials	411 22
	$790 72

MCGREGOR'S CREEK.

McGregor's Creek, situated in the county of Kent, is a branch of the T river at Chatham.

At the session of parliament of 1903, the sum of $4,500 was appropriated f sheet pile protection work and repairs to the old work at this place, and order issued on August 5, to proceed with the work.

An agreement was entered into with Mr. John Flook, on September 28, 1 provide and place piles 30 feet long, with anchor piles and waling complete, per lineal foot, 260 feet 6 inches lineal feet of pile-work was driven.

Expenditure for fiscal year, 1903-04 :—

To paid John Flook, as per agreement	$4,428 50
" inspection	107 50
	$4,536 00

MEAFORD.

Meaford is on incorporated town in the county of Grey, on the west Georgian bay, eighteen miles west of Collingwood, and twenty miles to the ea of Owen Sound. It is the terminus of the northern division of the Grand Trun way. Population, 2,500.

At the session of parliament of 1903, the sum of $20,000 was appropriated construction of a breakwater at the entrance to the harbour at this place ; pla specifications for this work have been prepared and tenders called for.

The sum of $2,000 was also appropriated to complete repairs to the piers work consists in rebuilding some 300 feet in length of the superstructure of t pier, from low water level; placing iron plates on the corners of the west pi Work was commenced on July 14, 1903, and was completed on June 27, 1904.

In doing the above work, some 17,564 feet board measure pine, 12,500 fee measure cedar and 79 cubic yards of stone were used.

Expenditure for fiscal year, 1903-04 :—

Labour and superintendence	$1,251 38
Materials	1,053 15
	$2,304 53

MIDLAND.

Midland, Simcoe county, is at the terminus of the Midland division of the Trunk Railway, on Georgian bay. Population, 3,500.

Large quantities of lumber are shipped to and from this harbour, and the company has two large grain elevators at this place. During the past two ye Canadian Iron and Furnace Company has erected large smelting works.

At the session of parliament of 1903, the sum of $12,000 was appropria dredging at this place, and the 'Owen Sound Dredge & Construction Co.' menced work on June 29, 1903, and removed 79,982 cubic yards of material con of boulders and hard clay.

On November 2, 1903, a contract was let to Mr. A. A. McDonald, of Hamil the sum of $19,492, to construct two pile wharfs, each 300 feet in length, for wh appropriation of $10,000 has been made. Work was commenced during the fair progress being made.

Expenditure for fiscal year 1903-04, $26,012.16.

To paid Owen Sound Dredging Co., over-expenditure, 1902-03	$16,700 00
To paid Owen Sound Dredging Co., from June 29, 1903 to June 30, 1904	18,035 00
To paid inspection	638 45
	$35,375 45
To paid A. A. McDonald, progress estimate	4,320 00
" inspection	102 00
	$4,422 00

MONETVILLE.

Monetville, a new post town, is situated on West bay, Lake Nipissing, about thirty-five miles south-west of Sturgeon Falls, Ont.

In the fall of 1903, a wharf 40 feet in length, with a freight shed, was built to accommodate local traffic.

Expenditure for fiscal year 1903-04, $578.17.

MORPETH.

Morpeth is a village in the county of Kent, on Lake Erie, fifteen miles from Thamesville, and thirty-two miles from Chatham.

On October 30 last, authority was given to expend the sum of $200 in executing absolutely necessary repairs to the pier at this place, by day labour.

In doing the above work, some 7,036 feet board measure hemlock and 150 pounds of iron were used.

Expenditure for fiscal year, 1903-04 :—

Labour and superintendence	$ 62 00
Materials	137 81
	$199 81

MOUNT JULIEN.

Mount Julien is situated in the township of Burleigh, county of Peterborough, on the north shore of Stony lake, and is distant 15 miles from Lakefield, of the Trent Valley Canal system.

On May 20 last, orders were given to repair the wharf at this place, same to be charged against Hiawatha.

In doing the above work, some 1,000 feet board measure tamarack, 700 feet board measure hemlock ; 52 feet board measure pine and 65 yards of gravel were used.

Expenditure for fiscal year 1903-04 :—

Labour and superintendence	$147 12
Materials	92 65
	$239 77

NEWCASTLE.

Newcastle is situated in the county of Durham, on the north side of Lake Ontario, 47 miles east from Toronto. It contains large woollen mills, a tannery and implement factory. Population about 1,000.

At the session of parliament of 1903, the sum of $8,000 was appropriated to complete repairs to the pier at this place. Work was commenced by day labour on August

10, 1903, and consisted in rebuilding the superstructure of the south end or landing pier, 210 feet in length, 16 feet wide, and 160 feet in length, also 80 feet in length, 40 feet wide, of the north end of the same structur

In doing the above work, some 171,329 feet board measure pine ; iron and 72 toise of stone were used.

Expenditure for fiscal year 1903-04 :—

Labour and superintendence	$1,948
Materials	6,051
	$7,999

OAKVILLE.

Oakville is situated on the north shore of Lake Ontario, in the county 29 miles west of Toronto. Population about 1,700. It contains severa factories and a shipyard. The trade of the place is local. It is a sta Hamilton branch of the Grand Trunk Railway.

At the session of parliament of 1903, the sum of $6,000 was appr repairs to the piers at this place, and on August 5 last, instructions were work commenced by day labour on August 22, 1903.

The work consisted in building two cribs and superstructure as head eastern pier ; one crib being 54 feet long, 24 feet wide and the other by 24 feet wide, giving a total length of 132 feet. Both of these cribs in 16 feet depth of water. The moving of the lighthouse, and re-buildin structure for a length of 50 feet and four feet in height.

In doing the above work, some 42,718 feet board measure, cedar and h used in cribwork, and 24.256 feet board measure, pine in the superstr 6,253 pounds iron for bolts, 19½ toise of stone ballast and 5 white oak mo

Expenditure for fiscal year 1903-04 :—

Labour and superintendence	$1,925
Materials	4,074
	$6,000

ORILLIA.

Orillia, in the county of Simcoe, is situated off Lake Couchiching, 89 west of Peterborough, and 23 miles north-east of Barrie. Population, 3,0

At the session of parliament of 1903, the sum of $7,000 was appropri construction of a wharf at this place.

The work consists in building a structure 200 feet in length, with a feet of cribwork substructure and concrete superstructure..

A contract was let to Messrs. Green & McKinnon, on January 12, 1 form the work for $8,389. Operations were commenced in April, 1903, an ture was completed on October 30, the same year.

Expenditure for fiscal year 1903-04, $6,634.67.

OWEN SOUND.

Owen Sound is situated at the mouth of the Sydenham river, whic the head of Owen Sound, an arm of the Georgian bay, in the county of

The town is the centre of an extensive agricultural district, and is the terminus of the Grand Trunk Railway branch of the Georgian Bay and Lake Erie division, also of the Canadian Pacific Railway—Toronto, Grey and Bruce division. There are several lines of steamers running to and from Owen Sound. Population, 9,500.

At the session of parliament of 1903, the sum of $16,000 was appropriated for dredging and pile protection work at this place.

The contract with A. F. Bowman for deepening and dredging on the west side of the harbour at the entrance, for a bulk sum of $24,210, was completed on October 17, 1903.

Orders were issued on August 5, 1903, to remove obstructions, and Mr. Bowman's dredging plant was employed for the purpose, and removed 40,375 cubic yards.

Instructions were given on December 5, 1903, to put in extra anchor piles behind the new sheet piling on the west side of the harbour, and 100 piles were driven.

Expenditure for fiscal year 1903-04, $15,984.85.

PELEE ISLAND.

Pelee Island is situated on the western end of Lake Erie, in Lat. 40° 46′ N., Long. 28° 45′ W., about 35 miles south-east from the mouth of the Detroit river, and 16 miles south of the town of Kingsville, Essex county. Population of the island about 600. The products of the island are grapes, wine, fruit and farm produce.

At the session of parliament, of 1903, the sum of $1,200 was appropriated to complete payment to Messrs. A. M. McCormick & Son, to whom a contract had been let on December 15, 1902, to build an extension at the outer end of the wharf at this place, 50 feet long and 40 feet wide, for the sum of $3,500. Authority was also given to build a warehouse on the wharf. The extension was completed in August, 1903, and warehouse in September, the same year. A bonded wareroom was constructed in the warehouse in February.

Expenditure for fiscal year 1903-04 :—

To paid, McCormick & Son, final estimate		$1,300 00
" Jos. Ley, building warehouse		369 00
" " cornice on warehouse		31 00
" " bonded wareroom in warehouse		80 00
" " inspection		138 00
		$1,918 00

PENETANGUISHENE.

Penetanguishene, in the county of Simcoe, is situated on the north-eastern peninsula in Georgian bay, formed between Nottawasaga bay and the water of the Severn river, forty miles north-west of the town of Barrie. It is the terminus of the branches of the Grand Trunk Railway, and a large quantity of lumber is shipped thence from the north and east shores of the Georgian bay.

At the session of parliament of 1903, the sum of $7,000 was appropriated for dredging at this place, to continue the agreement with Messrs. Bowman & Co., to do the work required. Work was re-commenced on June 29, 1903, and operation ceased on November 24, and was resumed on June 6. 1904.

From June 29, 1903, to June 30, 1904, 56,720 cubic yards of material were removed.

Expenditure for fiscal year 1903-04 :—

Paid Bowman & Co.	$7,214
" inspection	472
	$7,696

PICKERING.

Pickering harbour, formerly known as Frenchman's bay, is situated on tario, twenty-one miles east of Toronto.

At the session of parliament of 1903, the sum of $2,500 was appropria pairs to piers and dredging at this place, and on August 5, the same year was given to expend the sum of $500 to complete the repairs to piers by da

The work consisted chiefly in repairing the breakwater, which extends end of west pier to the beach, 120 feet in length of this structure has been r low water up.

In doing the above work, some 270 feet board measure 2-inch pine, board measure hemlock, 1,703 feet board measure pine and 367 pounds iron

Expenditure for fiscal year, 1903-04 :—

Labour and superintendence	$403
Materials	96
	$500

POINT AU BARIL.

Point au Baril is a village of some 100 inhabitants, and is situated o shore of Georgian bay, forty miles north-west of Parry Sound, the neare point. Fishing is the chief industry of the place.

At the session of parliament of 1903, the sum of $3,000 was authoriz removal of obstructions in the channel from Parry Sound to Killarney, at Baril and the Devil's Elbow, and on August 10, authority was given to have done.

Expenditure for fiscal year, 1903-04:—

Labour and superintendence	$ 485
Materials, dynamite, tools, &c	867
	$1,352

POINT EDWARD.

Point Edward, Sarnia, is situated in the county of Lambton, near the h St. Clair river, 61 miles west of London.

At the session of parliament of 1903, the sum of $10,000 was approp dredging at this place, and on July 2, the same year, orders were given t the employment of the plant belonging to Messrs. Muir Bros. & O'Sulliva Sarnia Bay Towing & Salvage Co., to do the work required, at the rate hour removing 800 cubic yards per day of 10 hours.

From July 1 to September 15, 1903, Muir Bros. & O'Sullivan's plant w hours and removed 38,950 cubic yards of material at a cost of $6,576.

From June 17, to November 14, the Sarnia Bay Towing & Salvage worked 1,188 hours and removed 91,800 cubic yards of material at a cost and from May 23 to June 30, 1904, the Sarnia Bay Towing & Salvage worked 336 hours, removing 29,160 cubic yards.

Expenditure for fiscal year 1903-04 :—

To paid, Muir Bros. & O'Sullivan	$6,576 00
" Sarnia Bay Towing & Salvage Co	14,256 00
" inspection	751 10
	$21,583 10

PORT ARTHUR.

Port Arthur is situated on Thunder bay, Lake Superior, in Thunder Bay district. It is the terminal of the Canadian Northern Railway. Population about 2,000.

At the session of parliament of 1903, the sum of $17,500 was appropriated for repairs to the breakwater at this place, and on November 9, authority was given to proceed with the work by day labour.

In doing the above work, some 337,064 feet board measure, pine ; 11,674 pounds iron and 435 cords of stone were used.

Expenditure for fiscal year 1903-04 :—

Labour and superintendence	$ 3,462 87
Material	10,539 77
	$14,002 64

PORT BURWELL.

Port Burwell is situated on the north shore of Lake Erie, in the county of Elgin. It is about 85 miles west from Port Colborne, at the Lake Erie entrance of the Welland canal, and 20 miles east of Port Stanley. This harbour is the terminus on Lake Erie of the Tilsonburg, Lake Erie and Pacific Railway, which extends inland as far as Ingersoll, where it connects with the Canadian Pacific Railway.

Previous to 1896, the harbour at Port Burwell was only a local harbour used by fishermen and small trading schooners. At that time, improvements on a large scale were commenced to enable the Tilsonburg, Lake Erie and Pacific Railway to deliver coal taken at United States posts on Lake Erie, to the industrial towns of centre Ontario, such as Ingersoll, Tilsonburg, Woodstock, Guelph, Brantford and others, and it was expected that 600,000 tons at least, would be imported that way annually at a saving of from 45 cents to 50 cents per ton to the consumers.

The harbour is situated at the mouth of Otter creek and is formed by two lines of works, running almost north and south ; the east line being 2,413 feet in length, the west line 2,855 feet in length, extending into Lake Erie, a distance of about 1,200 feet, the balance being along the banks of the creek.

Commencing out in the lake, the east line of works is composed of 550 feet of cribwork 30 feet in width, inclusive of a headblock or return to the east 50 by 24 feet; followed by a length of 700 feet of cribwork 20 feet in width ; then by 120 feet of cribwork 18 feet wide ; the whole of this cribwork being sunk in 22 feet of water at low water, and standing 6 feet above low water. Then follow 893 feet of piling ; the main piles being 35 feet in length, the anchor piles 25 feet in length, with two rows of sheet-piles, one inside the main piles 20 feet in length, the other, outside the main piles 22 feet in length. The main piles being driven to a depth of 29 feet below low water level, and the top of the work being 6 feet above low water level.

Next to this piling, there is a length of 150 feet of combined cribwork and piling, the cribwork being 12 feet in width and 6 feet in height, resting on piles cut off level with the water, these piles being 24 feet in length. These 150 feet of work were done during the fiscal year 1903-04.

On the west side, commencing also in Lake Erie, the line of works is composed of 975 feet of cribwork 20 feet in width, inclusive of a return to the west 50 feet by 30 feet forming the head block ; the cribs being in 22 feet of water, and the

top of the work standing 6 feet above low water ; then follow 220 feet 18 feet in length, in 11 feet of water only, but with close piling in fron length, with anchor rods passing through the cribs into anchor piles dr west side of the cribs, the height of the work being also 6 feet above low Next, comes a length of 1,050 feet of piling similar to the one described side ; then a length of 610 feet of combined piling and cribwork ; 480 fe were built in 1903-04.

The width of the channel at the entrance between the two headblo feet, narrowing to 130 feet at a distance of 500 feet ; then widening to 2 further distance of 400 feet, narrowing again to 185 feet at a further dist feet, then widening to a width of 350 feet at a further distance of 450 fee rowing again to a width of 170 feet at a furthur distance of 600 feet. A the harbour may be said to end, and the creek to commence.

The whole of the area between the two lines of works was dredged to 20 feet previous to 1904, but early in the spring of 1904, a very strong fre creek caused a considerable amount of silting, and soundings taken in show that the average depth of the harbour at that time was only 14 fee the very centre of the harbour, the minimum depth was 7 feet.

Before the harbour of Port Burwell can be utilized, for the purpose for consequent improvements have been made, the creek will have to be dive westward of the harbour, a breakwater constructed on the west side, and t lengthened.

During the fiscal year 1903-04, the following work was done in the Port Burwell :—

1. 280 feet of superstructure was built up at the outer end of the ea from low water to a height of 6 feet above low water, the width being 24

The work is of cribwork well put together, fully ballasted and planke 3-inch planks.

2. The protection work at the inner end of the harbour on the wes extended a further distance of 480 feet in a northerly direction.

This work was done as follows :—

A front row of close piling was driven, the piles being 10 x 12 inches and 24 feet in length. Then 12 feet back, piles of the same length and were driven 4 feet apart. All these piles were cut level with low water a 12 feet in width, well filled with brush and stone was built upon top of the height of 5 feet above low water, and planked over with 3-inch plank.

3. The inner end of the protection work on the east side of the harbou pleted over a distance of 150 feet, by building cribwork 12 feet wide, on the piling driven during the fiscal year 1902-03.

A considerable amount of dredging was done in the harbour durin 1903-04 at a further additional cost of $31,243.15.

PORT COLBORNE.

At the close of the fiscal year 1902-03, the western breakwater unde construction, at Port Colborne, Ontario, for the protection, against weste of the commercial docks built by the Department of Railways and Canals, ally completed ; there remaining only two feet of superstructure to be buil inner 1,200 feet of the breakwater, and the placing of 1,400 cubic yards of along the outer face of the structure. This work was satisfactorily co October, 1903, and the final estimate was given to the contractors on the October, the total cost of the breakwater aggregating $511,000.

The structure as completed consists of : 1. A headblock, 100 feet in 60 feet in width, on which the Department of Marine and Fisheries hav

handsome lighthouse built entirely of concrete and iron. 2. Of 4,400 feet of cribwork; the outer portion of which, 2,400 feet in length is 50 feet in width, and the remainder of it being in shallower water is only 25 feet in width.

During the autumn of 1903, the winter of 1903-04, and the spring of 1904, the timber superstructure was so severely tested by accumulations of ice, and by the force of the waves, it was decided to strengthen it very materially.

1. By building a concrete wall around the headblock, of an average thickness of 6 feet, and extending from a depth of 2 feet below low water to the top of the work, a height of 15 feet.

2. By substituting a concrete covering for the timber coveing originally specified, this covering varying in thickness from 1 to 1½ feet.

With this object in view, a contract was entered into with Mr. M. J. Hogan, as follows :—

1. For the concrete wall around the headblock, at the rate $7.50 per cubic yard of concrete in place.

2. For the concrete slope replacing the wooden steps forming the 'break,' and for the concrete covering on the outer portion of the structure at the rate of $8 per cubic yard of concrete in place.

3. For the concrete covering on the inner portion of the breakwater, at the rate of $7 per cubic yard of concrete in place.

In the three cases, the price included the removal of all timber and stone in the way of the concrete work.

This work was started on April 13, 1904, the date of the signature of the contract, and was very satisfactorily completed at the close of the fiscal year, at a cost of $38,075 divided as follows :

1. Concrete wall around headblock, 1,113 c. yds. at $7.50	$8,490 00
2. Concrete in slope and covering of outer portion of breakwater, 2,985 c. yds. at $8	23,880 00
3. Concrete on inner portion of breakwater, 815 c. yds. at $7	5,705 00
	$38,075 00

During the winter of 1903-04, it was also decided to increase the quantity of large stones along the outside face of the breakwater, and in consequence, an arrangement was made with Mr. Hogan for the placing of 10,000 cubic yards of these stones at the rate of $2.50 per cubic yard. This work was completed on June 30, the expenditure being $25,000. Some very large stones, varying in size from 2 to 6 cubic yards, were obtained from a quarry 18 miles distant from the work, these very large stones forming a total of over 5,000 cubic yards out of the 10,000 cubic yards placed. This rip-rap is a great protection to the structure, and should be continued.

During the fiscal year 1903-04, plans and specification for the construction of a second breakwater on the east side of the harbour were prepared, tenders were called for, and the contract awarded to the lowest tenderer, Mr. M. J. Hogan, for the sum of $179,000.

The contract was signed on June 8, 1904.

At the close of the fiscal year, no construction had been performed, but materials were being delivered.

The new or eastern breakwater is to be 600 feet to the eastward of the western breakwater. It will be 2,400 feet in length and 35 feet in width. The understructure to within 2 feet of ordinary low water mark being of timber cribwork, and the superstructure to a height of 11 feet above low water mark, being of concrete cribwork (Fraser's system).

The construction of this eastern breakwater will effectually protect the commercial docks from all easterly storms.

PORT ELGIN.

Port Elgin is in the electoral division of the southern portion of th Bruce, on the eastern shore of Lake Huron, about 24 miles north of Kin 4 miles south of Southampton. It is a station of the Wellington, Grey division of the Grand Trunk Railway. There is no track from the rai harbour. Population, 2,000.

At the session of parliament of 1903, the sum of $4,000 was appr dredging and repairs to the piers at this place, and on July 15, orders w proceed with the work by day labour.

The work consisted in completing the filling with stone ballast of t to the breakwater, and repairing the landing pier superstructure, length 20 feet wide.

In doing the above work, some 64,127 feet board measure, cedar; 2,0 measure, rock elm; 110 cords stone and 900 lbs. iron were used.

Expenditure for fiscal year, 1903-04 :—

Labour and superintendence	$1,01
Materials	1,81
Dredging	1,10
	$5,93

PORT HOPE.

Port Hope is situated in the county of Durham, on the north shore tario, sixty-three miles east of Toronto, on the Grand Trunk Railway, and lation of 4,188. The chief trade is in lumber and grain.

At the session of parliament of 1903, the sum of $7,500 was appropr pairs to piers and dredging at this place, and on August 5, authority expend the sum of $5,000 in repairs to the piers. Work was commenced 1904.

The work consisted in the rebuilding of 40 feet in length by 32 feet the superstructure of the east pier, south of the lighthouse, 45 feet in le pier, south ends of the warehouse, and 180 feet in length of the centre p on an average height of 4½ feet,with the other repairs that were found ne

In doing the above work, some 55,841 feet board measure pine, ni 1,061 pounds iron were used.

Expenditure for fiscal year, 1903-04 :—

Labour and superintendence	$2,27
Materials	2,72
	$5,00

RIVIÈRE AUX PUCES.

Puce is a village on the south shore of Lake St. Clair, thirteen Windsor.

At the session of parliament of 1903, the sum of $1,800 was appropri renewal of the sheet piling at this place, and authority was given on A same year to expend the amount by day labour. 250 lineal feet of work on the west side and 50 feet on the east side.

Expenditure for fiscal year 1903-04 :—

Labour and superintendence	$ 59
Materials	98
	$1,58

ROBBIN'S LANDING.

Robbin's Landing is a small settlement on the south shore of Rice lake, nine miles east of Harwood, and twenty-three miles north-east of Cobourg.

Authority was given in June, 1904, to expend the sum of $70 in repairs to the wharf at this place, which had been damaged by an ice shove during the spring.

Expenditure for fiscal year 1903-04, $143.44.

RONDEAU.

Rondeau is situated in the county of Kent, at Pointe aux Pins, on the north shore of Lake Erie, about 140 miles west of Port Colborne, the Lake Erie entrance to the Welland canal. It is a harbour of refuge and a very important one on this side of the lake. Of late years the beach at Rondeau has become a much frequented summer resort, and many cottages have been erected. The Erie and Huron Railway have constructed their line this far, and have established a dock for lake ferry to deliver coal in cars from the other side.

At the session of parliament of 1903, the sum of $6,000 was appropriated for improvements to the piers at this place, consisting in the construction of sheet pile protection works to the west pier to prevent the sand silting through from the lake into the channel, the work to be done by day labour, as the amount was not sufficient an additional sum of $5,600 was authorized to be expended on the work.

In doing the above work, some 156,984 feet board measure, pine ; 56,669 feet board measure, oak and 21,611 pounds of iron were used.

Expenditure for fiscal year 1903-04 :—

Labour and superintendence	$3,058 50
Materials	8,597 72
	$11,646 22

ROSEDALE.

Rosedale is a village in the county of Victoria, on the Rosedale river, 8 miles from Fenelon Falls.

At the session of parliament of 1903, the sum of $1,000 was appropriated for the construction of a wharf at this place, and on November 8, 1903, authority was given to do the work by day labour.

The work consists of a landing pier in the centre of the river, made up of two cribs with a span between, giving a total length of 50 feet by 16 feet in width ; a timber approach of cribs and spans 100 feet in length by 12 feet in width, and a road approach of 45 feet in length.

In doing the above work, some 10,782 feet board measure cedar ; 8,010 feet board measure pine ; 12,179 feet board measure hemlock and 1,274 pounds iron were used.

Expenditure for fiscal year 1903-04 :—

Labour and superintendence	$357 76
Materials	627 88
	$985 64

ST. JOSEPH.

St. Joseph is situated on the east side of Lake Huron, in the county about 14 miles south of Goderich. Population 500.

At the session of parliament of 1903, the sum of $4,000 was approp completing the wharf at this place, and on May 30, 1904, the departmen the offer of Mr. J. A. Corry to complete the structure for the sum of $3,9

Expenditure for fiscal year 1903-04, $4,604.11.

SARNIA.

Sarnia, the county town of the county of Lambton is situated on the river, six miles south from Lake Huron.

At the session of parliament of 1903, the sum of $6,000 was approp dredging at this place, orders were given to employ the dredging plant of Boone, 'General Meade' to do the work required, to be paid for at the rate hour, removing 800 cubic yards per day of ten hours.

Work was commenced on August 17, 1903, and completed on Septemb same year, during which time the plant worked 346 hours and removed 3(yards of material.

The dredging was performed in front of the Grand Trunk Railway wha Lake Erie Ferry slip.

Expenditure for fiscal year, 1903-04 :—

To paid,	C. S. Boone, dredging	$4,152 0
"	C. S. Boone, towage	1,341 0
"	inspection	158 4
		$5,651 4

SAULT STE. MARIE.

Sault Ste. Marie is situated at the head of St. Mary's river, which conn Superior with Lake Huron.

At the session of parliament of 1903, the sum of $18,300 was approp harbour improvements at this place, and on April 12, 1904, the contract for sion of the government wharf was let to Mr. Joseph Battle, for the sum of $

Some rock was blasted and removed, and dredging done in front of A Kay's wharf at this place, during July and August, 1903.

Total expenditure for fiscal year 1903-04, $13,669.42.

STURGEON FALLS.

Sturgeon Falls, a pos village in the district of Nipissing, Ont., is situa Sturgeon river and on the Canadian Pacific Railway.

The Sturgeon river is available for boats plying on Lake Nipissing.

During the fiscal year 1902-03, the sum of $500 was granted by parlian applied towards the construction of a wharf and approaches.

On January 23, 1903, a contract was let for the construction of a wharf of Wharf lane, for the sum of $2,810.

The wharf is 30 feet wide, has a frontage of 100 feet for a depth of water, together with an approach 20 feet wide and 40 feet long. The structu of four cribs united by platforms 6 feet above low water level.

Expenditure for fiscal year 1902-03, $506.54.

During the fiscal year 1903-04, an additional sum of $4,500 was granted by parliament.

The contract was completed in September, 1903.

A freight shed was added, and a suitable approach was built by grading and macadamizing Wharf lane, which is 200 feet in length and 33 feet in width. Repairs were also made to the approach, which sustained damages in the spring of 1904.

Expenditure for fiscal year 1903-04, $4,123.18.

Total expenditure to June 30, 1904, is $4,123.18.

SYDENHAM RIVER.

Sydenham river has its outlet in 'Chenal Ecarté' the passage between Ste. Anne island and the mainland. From its mouth to Wallaceburg, it is a large navigable stream, above this point it divides into two branches, north to Wilkesport 14 miles, and east past Dresden, 15 miles, and on these two branches small steam craft with scows are run, and booms of timber are rafted.

At the session of parliament of 1903, the sum of $5,800 was appropriated for improvements to the Sydenham river, and on July 24 the same year, authority was given to employ the plant of the Chatham Dredging Co., to remove the bar at the mouth of the Sydenham river (Chenal Ecarté), the terms being 13⅓ cents per cubic yard removed.

Work was commenced on August 26, and completed on November 3, 1903, during which time the plant removed 13,168 cubic yards of material at a cost of $1,777.67, and worked 139 hours removing obstructions, in the shape of sunken logs, snags, &c., for which payment was made at the rate of $8 per hour, 4,280 cubic yards of material were removed from the 'Chenal Ecarté' at 13⅓ cents per yard, also 39 hours dredging was done at Tupperville, at $8 per hour, 10 hours time was allowed for towage from Tupperville to Mitchell's bay at $4 per hour.

Expenditure for fiscal year 1903-04, $3,677.57.

THESSALON.

Thessalon is situated on the north side of the north channel of Lake Huron, in the district of Algoma, 50 miles east of Sault Ste. Marie. Considerable lumber is shipped from this place.

At the session of parliament of 1903, the sum of $5,000 was appropriated for the construction of a breakwater at this place, plans and specifications were prepared and tenders called for.

Some repairs to the wharf were authorized in March, and completed in May, 1904.

Expenditure for fiscal year 1903-04, $417.27.

THORNBURY.

Thornbury, an incorporated village in Grey county, is situated at the mouth of Beaver river, which empties into Georgian bay, on the Meaford branch of the Grand Trunk Railway, 8 miles from Meaford, and 19 miles from Collingwood. It contains four churches, twenty stores, two hotels, two grist, one saw, one woollen and one planing mill, two printing offices issuing weekly newspapers and telegraph and express offices. Population, 900.

At the session of parliament of 1903, the sum of $1,500 was appro
repairs to harbour works at this place, and on August 5, authority was given
the amount. The work consists in repairs to the landing pier, renewing m
portion below low water, from the shore end out, some 400 feet in length.

Work was commenced on August 26, 1903, and continued up to De
when operations ceased for the winter months. Work was recommenced
1904. In connection with the above work, some 15,750 feet board measu
000 feet board measure elm and 456 pounds iron were used.

Expenditure for fiscal year 1903-04 :—

Labour and superintendence	$1,155
Materials	343
	$1,499

TOLSMAVILLE.

Tolsmaville is a village on the east shore of Cockburn island, Georgi
Algoma district. Bruce Mines is the nearest railway point.

On July 18, 1903, instructions were given to repair the wharf at this
the sum of $400 was authorized for this purpose, to be charged to Harbours

The work consisted in replanking and renewing the floor stringers, the
of the wharf, and in doing so, the following materials were used : 7,248 feet
sure cedar; 7,044 feet 3-inch cedar plank; 700 feet board measure oak, and 7

Expenditure for fiscal year 1903-04 :—

Labour and superintendence	$142
Materials	257
	$399

TORONTO.

Toronto harbour is situated on the north shore of Lake Ontario, and
by a circular bay 1½ miles in diameter, separated from the lake by a low i
merly a peninsula) about 6 miles long, making a safe and well-sheltered h
containing a large number of vessels.

At the session of parliament of 1903, the sum of $14,000 was appro
works at the eastern entrance, and authority was given on August 7 to
amount of the appropriation in constructing four groynes to prevent the ero
south shore of the island, and in making general repairs to the eastern pie

Four groynes were constructed on the south shore of the island, and re
made to the face timbers of the east pier, the decks of the east and west
also renewed.

Dredging was carried on for a period of 33 days, but, owing to heavy
the dredging was discontinued.

The following quantities of materials were used in the construction
and repairs to piers, 70,340 feet board measure hemlock; 6,228 feet board me
4,343 white oak, 1,608 lineal feet of brush matting and 471 cubic yards of

The sum of $20,000 was also appropriated for sheet piling a length of
on the channel side of the eastern pier, northwards from the lighthouse.

Up to June 30, 927 lineal feet of the pile work had been completed.

In doing the above work, the following quantities of materials were use
feet board measure, southern pine; 79,330 feet board measure, white pine;
board measure, white oak, and 2,282 feet board measure, tamarack.

Expenditure for fiscal year 1903-04, $44,680.73.

VICTORIA HARBOUR.

Victoria Harbour is situated in the county of Simcoe, on Matchedash bay, ten miles west of Midland.

At the session of parliament of 1903, the sum of $8,000 was appropriated for dredging at this place, and on May 27, orders were given to employ the plant belonging to Mr. C. S. Boone, to do the work required, the terms being $12 per working hour, removing 80 cubic yards of material, or 800 cubic yards per day of ten hours. The plant was at work during 449¼ hours, removing 34,288 cubic yards.

Expenditure for fiscal year, 1903-04 :—

To paid, Mr. C. S. Boone, use of plant	$6,804 00
" inspection	160 10
	$6,964 10

WASHAGO.

Washago is a village in the county of Simcoe on the Severn river, and is distant thirteen miles north-east of Orillia.

At the session of parliament of 1903, the sum of $2,000 was appropriated for regulating the waters of Lakes Simcoe and Couchiching, repairs to works at Washago, &c.

This work was carried out in two sections, part of the work being done on the Severn river above the stop-log dam near Washago, consisting of blasting and cleaning out river bed of obstructions, and the other portion of the work consisted in removing by blasting, obstructions in Black river and Blind channel near Washago.

Expenditure for fiscal year, 1903-04 :—

Labour and superintendence	$1,670 64
Materials	256 31
	$1,926 95

WENDOVER.

Wendover, in the county of Prescott, is situated on the south shore of the River Ottawa, opposite North Nation Mills, a station of the Canadian Pacific Railway. The nearest railway station on the south shore is Plantagenet, distant about eight miles.

The construction of a wharf at this place was commenced in September, 1901. It consists of the following, viz.:—

(a.) A stone embankment 160 feet long from the shore, 18 feet wide at the top with slopes of 1 in 1 on the sides, and a height of 12 feet at the north end.

(b.) A trestle or pile approach 342 feet in length from the stone embankment to the head block, by a width of 18 feet, for 294 feet of its length, and a width of 60 feet for the remaining 48 feet adjacent to the headblock.

(c.) A headblock of pile-work laid at an angle of 82°, 30′ with the approach 71 feet in length, by a width of 32 feet, with a close-faced cribwork ice-breaker, 37 feet by 24 feet, at its up-stream end.

The wharf at its outer face has a height of 30 feet, stands in 10 feet at low water, and is three feet above the high water level.

During the fiscal year 1903-04, the sum of $1,097.48 was expended in completing the wharf at that place. The work consisted in re-enforcing the bracing of the

pile approach, lowering the top of the hill on the road leading to the whar
pleting the stone embankment.

The work was carried out by day labour. The total expenditure on th
$10,694.12.

WIARTON.

Wiarton is situated in the north riding of the county of Bruce, at t
Colpoy's bay, about thirty-two miles north of Owen Sound. It is the term
Georgian Bay and Lake Erie branch of the Grand Trunk Railway.

At the session of parliament of 1903, the sum $10,000 was appropriat
construction of a wharf on the east side of the harbour at this place.

Plans and specifications were prepared, and tenders called for this
owing to some difficulty in obtaining the right-of-way, the work has not b

PROVINCE OF MANITOBA.

FAIRFORD RIVER CANAL—LAKE MANITOBA OUTLET.

The work of procuring material and equipping a plant to do the work
out the bed of the Fairford river, at the foot of the Fairford River cana
ceeded with.

This plant, which is the main item of cost for this work, is also inte
used in connection with both the Mossy river and lowering Lake Dauphi
part of its cost was charged to the latter works. The clam shell that was
of Lake Manitoba in 1903, was cleaned up and put together again, place
scow, and is in a condition to work. One of the difficulties to be overcom
nection with this work, is, that it is a long distance from the nearest centr
lation, and the need of a staunch tug, to look after the dredge, was felt.

The expenditure incurred in connection with this work, during the
1903-04, amounted to $2,243.59.

GIMLI, LAKE WINNIPEG.

Owing to the yearly damages caused by the waves to the rip-rap appro
pier, piles were driven through the stone that remained of the old appr
length of 100 feet from the permanent work.

The pilework was capped, stringered and planked over, near the sho
embankment was built on a length of 50 feet, together with minor rep
wharf.

The expenditure for the year 1903-04 was $1,111.83.

GULL HARBOUR.

It was found that the outer 60 feet or so of the Gull Harbour wharf
over 2 feet. The sum of $1,306.72 was expended during the fiscal year
rebuilding the wharf on that height and putting on a new floor.

HNAUSA, LAKE WINNIPEG.

The wharf at this place was the first constructed by the department on
nipeg. The cribwork, for a length of 300 feet, had deteriorated, sagged, a
This part was levelled and the flooring renewed, and a small cribwork pie

in the place of the old stone approach, a short stone embankment was made on shore, next to the new pier.

The expenditure during the fiscal year 1903-04, was $1,480.20.

ICELANDIC RIVER.

The site of the wharf at Icelandic river is 4 miles up the stream from Sandy bay. Only boats of moderate, 4½ feet, draft can go up this stream at present, on account of the bar at its mouth, although a depth of water varying from 10 to 15 feet is found in the river.

A pile wharf was commenced at this place during the fiscal year 1903-04, for which the sum of $844.04 was expended.

LOWERING LAKE DAUPHIN.

The work of equipping a plant to do the work of cleaning out the bed of the Mossy river, for the purpose of regulating the flow of Lake Dauphin, was proceeded with. Material has been ordered for the construction of a plant that would answer this purpose as well as the Winnipegosis and Fairford river works. The sum of $2,224.26, was expended during the last fiscal year in providing the material and labour required to equip the said plant.

SELKIRK WHARF.

An extension of 200 feet to this wharf was constructed during the fiscal year 1903-04. Part of the material for a further extension of 100 feet, was also ordered, but owing to the strong objections raised by the owner of the property that would adjoin this further work, it was not proceeded with.

The total cost of the extension and the material alluded to, aggregated $2,953.23.

The work consists in ordinary piling with anchor piles and sheet piling, filled in with loose stone. Grading and filling back of the wharf was also done.

The extension, as well as the old wharf, stood the enormous flood and ice shove of the spring of 1904 without damage.

The total length of the present wharf is 500 feet, and is a great accommodation for several boats which call here to unload lumber, cordwood, fish and general merchandise.

ST. ANDREW'S RAPIDS, LOCK AND DAM.

The actual work done on construction, by the contractors during the fiscal year 1903-04, has consisted of the removal of 1,330 cubic yards of rock from the site of the proposed lock. This was accomplished during the period extending from July 1, 1903, to September 12, 1903.

With the exception of a small quantity of trimming, the excavation for lock foundation is practically completed.

From September 30, 1903, to February 26, 1904, 3,800 cubic yards of stone for crib filling and for crushing were delivered on the site of the work. Of this quantity, 876 cubic yards have been rejected, as being too large to use for crib filling and too expensive to break with the crusher.

From February 26, 1904, to April 5, 1904, 504 cubic yards of sand for concrete were delivered on the site of the work.

The above comprises all the work accomplished during the year by the contractors for the lock and dam.

PROVINCE OF BRITISH COLUMBIA.

ANDERSON AND KENNEDY LAKES.

Anderson lake empties into Uchucklesit inlet in Barclay sound and Ken Clayoquet sound, near its head on the west coast of Vancouver island.

The work is for the purpose of improving the outlets of these lakes to s giving access to boats, without the necessity of breaking bulk in the ca supplies, to the mining claims in course of development on both lakes, number and importance, are almost identical. The work consists of the r rocks and boulders from the channels and a facing of cribwork on the lan the purpose of tracking up boats and canoes during low tide. This wo approaching completion and has been much appreciated by those concerne

The expenditure for the year ending June 30, 1904, on the above wo follows :—

Anderson Lake—		
Wages	$ 696 75	
Provisions	215 15	
Material	87 24	
		$ 999 1
Kennedy Lake—		
Wages	1,172 00	
Provisions	226 96	
Material	100 29	
		1,499 9
Total		$2,499 0
Appropriation		2,500 0
Balance		9

COLUMBIA RIVER, ABOVE GOLDEN.

The working season on this portion of the Columbia river is regulat annual rise of water, and is covered as a rule by the months of July, Au September. The spring months give but little time for work from the tin leaves the river until the spring rise, usually occuring early in May.

During the year 1903-04, the old dredge 'Muskrat' was able to do very in putting in a long wing dam at Horsethief creek, some 400 feet in length low Little warehouse, a quarter of a mile below Horsethief creek bar ; an across the head of Irvine's channel. The object of these wing dams is to c water, as much as practicable to one channel, and thus getting the benefit creased current consequent upon such contraction to scour out the bars. Th has been found both preferable to and more permanent than dredging. T 'Muskrat' was worn out and practically useless in any case and had to be co The result of the present method of improvement has been very satisfactory a greater depth of water now on the different bars during extreme low w ever before, and the river steamers run from the opening of navigation until ice. These dams will in some cases require further extension to get the be

They are well and strongly built consisting of two rows of piles, 5 feet apart, driven from 7 to 8 feet centres, filled with brush and loaded with rock, making an effective and comparatively permanent dam.

NEW HULL.

In the month of April work was commenced on a new hull for tug boat, &c., to be used in connection with pile-driver and moving scows, &c., in the work of river improvement, the old dredge, as stated, being unsafe and condemned. The work of building the new hull was carried on continuously until completion at the end of June. It was found necessary to get the lumber, &c., from the coast, which was better and no more expensive than the local mills, which were, however, unable to fill the bill satisfactorily. Some delay was caused in consequence, but the boat was satisfactorily launched in the early part of July. Her length of hull is 80 feet, beam 20 feet, with 2 ft. guard rail. The lower deck is reserved almost entirely for working purposes and affords ample room for work benches, hoisting engines, fuel, &c. On the upper deck a house has been built with caboose, mess-room, staff quarters, room for conductor, and complete sleeping quarters for eight men. She has had two coats of paint inside and out and has been completed, exclusive of equipment, under the appropriation of $4,500.

WILMER CHANNEL.

This is a work that has been under consideration for some years past and was during the last fiscal year prosecuted under an appropriation of $1,000 granted for the purpose. The work was commenced on April 11, 1904, the object being to connect the river with a slough so as to give access to the foot hills, about half a mile distant from the river, during high water. The work has, however, been completed to the satisfaction thus far of the residents of Wilmer, and a channel 350 feet long, 50 feet wide, and from 2½ feet to 3 feet in depth has been excavated.

The following is the expenditure under the different heads comprising the above service for the fiscal year 1903-1904:—

Columbia River above Golden:—		
Wages	$1,552 97	
Provisions	231 60	
Material	571 24	
Fuel	132 25	
Transportation	203 60	
Rent	96 00	
		$2,787 66
New Hull:—		
Material	$2,163 50	
Wages	2,571 23	
Transportation	55 90	
		4,790 63
Wilmer Channel:—		
Material	$ 140 00	
Wages	732 40	
Freight	42 00	
		914 40
Total		$8,492 69

COLUMBIA RIVER, BELOW GOLDEN.

The bulk of the expenditure for this work was made during the month and the first week in November, 1903, in putting in a wing dam at t Kitchen's rapids, four miles above Beaver, extending from the east or rig the river almost entirely across the Columbia, to prevent the logs from pi heretofore, on the reef or bar extending across the entire river and causing This improvement was made at the request of the Columbia River Lumbe the dam has quite fulfilled all that was expected from it. Owing to a som rise, on November 7, it was not possible to complete this work until the lo April and May of 1904. The dam is a crib of round logs, put together with ties and drift bolts, well filled and weighted with boulders and quarried ro already been fairly well tested by the high water. A small boom was also p an outlet leading out of Aylmer channel. This work was done by the Colu Lumber Company, and is sufficiently strong to answer the purpose intended

The expenditure for the year 1903-04 was as follows :—

Wages	2,329
Provisions	437
Material	2,022
Transportation	135
Total	$4,924

COLUMBIA RIVER, ABOVE REVELSTOKE.

This work is a continuation of the improvement of this portion of th river, extending from the city of Revelstoke to the present head of na Downey creek, 10 miles below the foot of the 'Dalles des Morts,' or Death distance of 40 miles. It is an exceptionally difficult stretch of water to nav any circumstances, and the work has thus far been directed to the removal o points of rock and reefs and the many boulders obstructing the channel, serious menace to the safety of the steamer 'City of Revelstoke,' runni route. The work done has been of very great benefit to navigation, but, with all works of this nature, the removal of one difficulty sometimes develo so that the general work of improvement must be taken in detail and ca sidered before being commenced to prevent increasing instead of lessenin culty.

The expenditure for the fiscal year 1903-04 was as follows :—

Wages	$3,729
Provisions	642
Material (explosives, &c.)	1,513

COLUMBIA RIVER, BETWEEN ARROW LAKES.

This service, representing the work of the dredge 'Nakusp.' After a t amination and test of this new dredge, it was found necessary to make al the machinery which were not completed until February, 1904, since whi the opening of navigation, the dredge has done good work in front of th Pacific Railway at Arrowhead and Robson, and elsewhere.

The expenditure for the fiscal year 1903-04 was as follows :—

Wages	$5,775 35
Provisions	2,120 78
Material	2,936 96
Fuel	400 70
Scow hire	459 00
Transportation	83 94
Contingencies	6 85
Total	$11,783 58

DUNCAN RIVER.

The usual work of clearing the banks of leaning trees and brush projecting over the channel and removing snags and stumps deposited by erosion constitutes the operations in connection with the above service in the spring of 1904 during the lowest stage of water obtainable. This work is of annual recurrence and will continue until the river has settled into a defined direction.

The expenditure for the fiscal year 1903-04, was as follows :—

Wages	$1,503 00
Provisions	382 90
Transportation	107 25
Total	$1,993 15

FRASER RIVER.

During the fiscal year 1903-04 some much needed repairs were made to the protection works at Point Garry at the mouth of the river, and repairs and an extension to the dam on Sand Heads, a mile below Point Garry, to check the threatened diversion of the channel to the north. In the former case twenty-two mattrasses, 26 by 60 feet and 2½ feet thick, covering a length of 600 feet, were sunk in position and 2,150 tons of rock used on new mattrasses and in strengthening weak points. In the latter case, the upper end of dam was extended some 220 feet sinking eight mattrasses 26 by 80 feet, 2½ feet thick, and two mattrasses, at the lower end, of the same dimensions, 26 x 80 x 2½ feet, the shore connections were strengthened. Three hundred tons of rock were used in loading these mattrasses and 7,000 tons were used in raising the height of the dam and filling in gaps which had been out between the original mattrasses, in some cases to a depth of 15 feet. The length of dam is 3,500 feet and its stability is of vital importance to the maintenance of the present channel through the Sand Heads.

In addition to the above expenditure, one month's work of the dredge 'King Edward' and snag boat 'Samson' was charged to this service. Two new scows were also built.

The expenditure for the fiscal year 1903-04 was as follows:—

River Improvement :—		
Wages	$11,218 61	
Provisions	2,165 81	
Material	4,261 96	
Tug hire	3,685 75	
Scow hire	928 00	
Tide gauges	501 70	
Superintendence	1,638 20	
Boiler for pile-driver	616 18	
New scows	5,131 41	
Repairing dyke	66 00	
Contingencies	20 70	
		$30,234
Dredge King Edward :—		
Wages	$ 1,092 00	
Provisions	446 94	
Material	109 30	
Tug hire	628 33	
Fuel	682 00	
Contingencies	6 45	
		2,965
Snag Boat Samson :—		
Wages	$ 625 00	
Provisions	225 97	
Material	103 68	
Water	10 67	
Contingencies	2 40	
		967
Total		$34,167

QUATSINO.

Quatsino Sound is the most northerly harbour on the west coast of island, and is directly west of Hardy bay, which is, correspondingly, the mo harbour on the east coast. The two are connected by a fairly passable tr distant 11½ miles. In the immediate vicinity of Quatsino wharf there is an Indian village and trading post, and the Yreka mines, with which c traffic is done. During the fiscal year, a wharf was built at this place to regular bi-monthly steamer to discharge freight and mails. The wharf is tial structure, extending out to deep water by an approach 250 feet in ler T of 100 by 40 feet, and a small warehouse for storage purposes was built

The expenditure was as follows :—

Wages	$1,852
Provisions	601
Material	2,015
Engine hire	502
Contingencies	19
Total	$4,991

SIDNEY BREAKWATER.

The exposed position and broken weather delayed the commencement of this work until March 1 last, since which time the work has been steadily continued to the end of the fiscal year. The work consists of a pile protection extending from the shore at Sidney, some 1,000 feet, to give a sheltered area and protect the wharf now used by the Victoria Terminal Railway and Ferry.

The expenditure has been as follows :—

Wages	$3,431 79
Material	3,548 72
Tug hire	519 00
Fuel	65 00
Team hire	171 00
Contingencies	3 85
Total	$7,739 36

SKEENA RIVER.

The expenditure on the Skeena river for the year 1903-04 has been exclusively confined to snagging at the mouth and on the upper reaches of the river, or to the head of tide water, some thirty miles, and to the necessary repairs to the snag scow, which has neither the power nor size to cope with the large snags and constantly increasing demands by the fishermen for the removal of these obstacles to fishing. The balance remaining at the conclusion of the fishing season in August, 1903, of some $2,882.50, did not admit of attempting the removal of boulders, &c., on the upper river between Kitsilas canyon and Hazleton, at the forks, a distance of 80 miles—which is still required—but was devoted to repairs and renewed work of snagging, beginning on April 11, 1904, and carried on continually to the end of the fiscal year, June 30, 1904. The work is reported as being fairly satisfactory, the limited powers of our snag scow considered. There are still many large snags in deep water which it is not possible to raise or dispose of with the present appliances, and which should be removed. Consequently the want of a powerful snag boat is badly felt.

In a short time the fishing industry on the Skeena will possibly be double its present extent. There are at present some thirteen canneries tributary to this service, averaging in good years 250,000 cases annually. They have now in use over 11,000 nets, of 200 fathoms in length each, and valued at $150 each. They claim that the damage done annually to their nets by snags amounts to one-third of their value, which as can be seen, entails a very serious loss to the cannerymen, who furnish the entire outfit of boats and nets to the fishermen. These nets are also being made deeper than formerly, with the result that there is a greater development of snags and consequent demand for their removal. These considerations all point to the importance of an improvement in the appliances for the removal of this source of trouble.

The expenditure in connection with the above service for the year 1903-04, is as follows :—

Wages	$2,904 51
Provisions	715 24
Material	681 46
Fuel	603 50
Tug hire	45 00
Total	$4,949 71

SPALLUMCHEEN RIVER.

The work on this river consisted in the protection of the bank of th cheen river at the town of Enderby on the property of the Columbia Flo Co. The river was making serious inroads in this property immediately the company's mills and offices, and it was upon their application that th carried out. There was some imperfect protection done by the Mill Co., bu a great measure, disappeared. The work done by the government consists tion wall about 300 feet in length built by driving piles at 5 feet centres water line which are faced with 2 x 8 inch planks laid 4 inches apart to about ten feet and then backed with brush loaded with rock. From the fr piles at water line there are ties to a second row driven well in shore.

The expenditure for the fiscal year 1903-04 was as follows :—

Wages	$ 816
Material	671
Contingencies	1
Total	$1,490

THOMPSON RIVER.

The work consists in an improvement in the navigation of the North river, which it was decided to do by means of wing dams to contract the c get the consequent scour and deepening of the bars where most necessary. possible to complete the dam during the fiscal year owing to the sudden pected rise in the river.

The expenditure for the fiscal year 1903-04 was as follows :—

Wages	$1,555
Provisions	645
Material	635
Team hire	231
Hoisting engine	1,677
Total	$4,746

VICTORIA HARBOUR.

The dredge 'King Edward' worked from July 1 to November 21, 1903 in the James bay flats in rear of the retaining wall and the site of the pr Canadian Pacific Hotel now definitely settled to be located on this propert was not completed. The cost of the services of the 'King Edward,' althou not exceed the time anticipated, were enhanced by the necessity of charg to this service instead of to that of dredge repairs, which was exhausted.

The dipper dredge 'Mud Lark' was engaged in deepening the entra from the outer wharf to the inner harbour to a depth of 17 feet at e tide. The material is very hard and the dredge very shaky.

The construction of the Marine Railway, capable of accommodating 3,000 tons, at the head of the Inner harbour, now nearing completion by t machinery depot, will necessitate further dredging in that direction. Thi be done by the 'Mud Lark' upon the completion of her present work. Wh of doing this harbour work, she is unfit to move to other distant point crossing or navigating the Gulf of Georgia.

The expenditure for the fiscal year 1903-04, was as follows :—

Dredge King Edward—		
Wages	$5,889 29	
Provisions	1,594 95	
Material	901 10	
Water	9 25	
Coal	3,753 99	
Tug hire	129 50	
Contingencies	58 36	
		$12,336 44
Dredge Mud Lark—		
Wages	$5,546 53	
Provisions	1,946 01	
Material	2,653 78	
Fuel	2,415 50	
Water	58 78	
Contingencies	17 58	
		12,638 18
Total		$24,974 62
Appropriation		25,000 00
Balance		25 38

WILLIAM'S HEAD QUARANTINE STATION.

The work in connection with this quarantine station in the fiscal year 1903-04, has been more than usually heavy and much needed work has been done.

The works were commenced on April 6 last and were carried on continuously until the end of the fiscal year. The work consisted of replacing the pipe line over the small ravines by new trestle work and new 4-inch cast iron pipe—some 500 feet in length ; gravelling and completing the road connecting the station with the main Metchosin road, some 2½ miles, the only means of access, other than by water, from the city of Victoria to the station and over which supplies, &c., are delivered during quarantine; and the completion of an entirely new road and tramway connecting the disinfecting station with the central and western approaches to the wharf. A large number of new drives, well gravelled and graded, have been opened through the grounds much to their advantage, both in appearance and convenience.

The water service will require further attention as the original pipes are far gone with erosion and perforation but are being gradually replaced with new cast-iron pipes; the grounds and general efficiency of the station have never been in as good a shape as at present.

The expenditure for the fiscal year was as follows:—

Wages	$ 6,132 15
Team hire	979 31
Material	3,857 59
Contingencies	4 00
Total	$10,973 05

DREDGING OPERATIONS.

During the fiscal year 1903-04, dredging was done at the following

PROVINCE OF NOVA SCOTIA.

Acadia Coal Company piers, Pictou county.
Barrington channel, Shelburne county.
Burnham & Morrell wharf, Pictou county.
Eastern harbour, Cheticamp channel, Inverness county.
Hogg, Craig & Co., wharf, Pictou.
Intercolonial Railway, Pictou landing wharf, Pictou county.
Intercolonial Mining Company piers—Skinner's Point, Pictou co
Liverpool Bar and channel, Queen's county.
Mabou channel, Inverness county.
Main channel to Market wharf, Pictou county.
Marine slip and wharf, Yarmouth county.
Market wharf, Pictou county.
Pictou Bar, channel, Pictou county.
Port Hood Coal Company wharf, Inverness county.
Steamboat wharf and channel, Yarmouth county.

PROVINCE OF PRINCE EDWARD ISLAND.

Halliday's wharf, Belfast, Queen's county.
Morrell channel, King's county.
Vernon River bridge, pier and channel, Queen's county.

PROVINCE OF NEW BRUNSWICK.

Caraquet, foundation new pier and old wharf, Gloucester county.
Gagetown wharf and channel, Queen's county.
Grand lake, Channel Jemseg into Grand lake, Queen's county.
Intercolonial Railway, N.R.C., St. John city and county.
Neguac, Northumberland county.
Oromocto shoals channel, Sunbury county.
Point du Chene wharf and channel, Westmorland county.
Queen's Coal Company bar and basin, Queen's county.
Richibucto Bar, Kent county.
Russel Bar, York county.
Winter port berths for ocean steamers, St. John city and county.

DREDGING OPERATIONS.

PROVINCE OF NOVA SCOTIA.

DREDGING AT ACADIA COAL PIERS, PICTOU LANDING, PICTOU COUNTY.

Pictou Harbour, Pictou county, is the finest on the southern shore of the Gulf of St. Lawrence, eastward of Gaspé. The valuable coal mines and stone quarries in the vicinity, and the finely settled and fertile country enhances its importance.

On the north shore of the harbour along the declivity of a ridge, the town of Pictou is situated, opposite which the harbour expands into three large arms, and at the head of these are East, Middle and West rivers. Pictou is the eastern terminus of a branch of the Intercolonial and of the Oxford and Pictou branch, and is 113 miles north-east of Halifax. It is well built, having many good stores, several hotels, branch banks, factories, saw-mills, iron foundry and machine shops, lumber yards, marble works, stone quarries and other industries. Here are also an academy, library Masonic hall, several churches, &c. The town has a population of about 3,235, and an extensive trade. The annual exports of coal are very large. The Prince Edward Island Navigation Company make Pictou a terminus for their steamers, and it is a place of call for other lines. Pictou has a marine slip, with two cradles capable of hauling large vessels with skilled labour for repairs, &c. The dredging done by the department at Pictou was at several localities in the harbour to facilitate shipping, &c., improving the approaches to the wharfs, and deepening at and around them for berths.

During the fiscal year 1903-04, the dredge 'Cape Breton' was engaged improving the depth of water at the new loading piers of the Acadia Coal Company, Pictou Landing, from May 25 to June 3, removing 8,400 cubic yards of mud, sand and gravel, at a cost of 10·84 cents per cubic yard. At Burnham & Morrill's wharf, on June 15 and 16, removing 1,050 cubic yards of mud, at a cost of 20·11 cents per cubic yard. At Hogg, Craig & Co., wharf, and to Main channel, June 4 to 14, removing 6,090 cubic yards mud, at a cost of 19·77 cents per cubic yard. At the Market or Harbour Commissioners wharf, June 23 to 30, removing 4,830 cubic yards mud, at a cost of 16·47 cents per cubic yard. At Intercolonial Railway wharfs at Pictou Landing, June 17 to 22, removing 3,395 cubic yards sand and gravel, at a cost of 16·90 cents per cubic yard. The Intercolonial Mining Company's loading piers, at Skinner's Point, on the East river, was further improved by the dredge 'St. Lawrence,' from May 17 to June 2. and June 8 to 10, removing 7,700 cubic yards of mud, &c., at a cost of 20·52 cents per cubic yard. This dredge was also engaged from June 3 to 7, and June 11 to 24, in improving the channel leading from the Main channel to the Market or Harbour Commissioners wharf, removing 9,100 cubic yards of mud, at a cost of 14·27 cents per cubic yard, and at the entrance to the harbour on Pictou Bar, from June 25 to 30, removing 1,750 cubic yards of sand and gravel, at a cost of 19·72 cents per cubic yard, improving the channel to 19 feet, and this work was in progress at the close of the fiscal year.

DREDGING AT BARRINGTON PASSAGE.

A seaport town of Shelburne county, four miles west of Barrington Head, and 165 miles south-west of Halifax. The population is engaged in fishing and farming. There were no wharfs in the district having a depth of water at their outer ends, cap-

able of floating vessels at low water, and the bottom is of such a nature not thought desirable to attempt dredging for the purpose. After an exar the locality, it was decided to improve Sherrow's channel, a mile to the east son's wharf, and in 1888-89 the dredge 'Canada' was employed to improv nel removing 11,745 cubic yards. In 1889-90, the work was continued by the channel from its mouth to where the present public wharf or pier nov a depth of 11 feet, by dredging a basin to enable vessels to lie afloat at when the further quantity of 8,464 cubic yards was removed. In 1891-92 or pier being completed the dredge 'St. Lawrence' improved the basin to feet at low water, removing 4,375 cubic yards. In 1897-98 the dredge 'C moved 12,780 cubic yards, further improving the channel; and again in moving 12,510 cubic yards. In the fiscal year 1903-04, the dredge 'Canad there, removing 19,440 cubic yards of mud, from September 1 to Decemb cost of 44:92 cents per cubic yard, and the work is being continued.

DREDGING AT CHETICAMP, EASTERN HARBOUR.

The dredge 'Geo. McKenzie' continued improving the channel at this October 2 to November 27, 1903, and May 25 to June 30, 1904, removing 1 yards sand and gravel, at a cost of 60·65 cents per cubic yard, the work progress at the close of the fiscal year 1903-04.

DREDGING AT LIVERPOOL BAR AND CHANNEL.

The dredge 'Canada,' at the close of last fiscal year, 1902-03, was engag ing the depth of water over the bar and in the channel at Liverpool, and co same from July 1 to August 31, 1903, removing 11,610 cubic yards of san at a cost of 42·56 cents per cubic yard, when the work was completed.

DREDGING AT MABOU.

The dredge 'Geo. McKenzie,' was engaged improving the channel to ten feet from July 1 to August 24, removing 5,405 cubic yards sand and cost of 71·05 cents per cubic yard.

DREDGING AT PORT HOOD.

The dredge 'George McKenzie' operated at the Port Hood Coal Comp ing piers, at the public wharf, and at Smith's wharf at this place, from A October 1, 1903, improving the depth of water by removing 2,970 cubic gravel and mud, at a cost of 69·94 cents per cubic yard.

DREDGING AT YARMOUTH.

The dredge 'Canada' operated in Yarmouth harbour, at the marine sli boat wharf or channel, alternately, as the tides answered, removing 720 at the steamboat wharf, and 1,440 cubic yards at the marine slip, at a co cents per cubic yard.

PROVINCE OF PRINCE EDWARD ISLAND.

DREDGING AT HALLIDAY'S WHARF, BELFAST, QUEEN'S COUNTY.

The dredge 'Prince Edward' was operating here at the close of last fiscal year, 1902-03, and continued the work from July 1 to August 13, 1903, removing the further quantity of 13,365 cubic yards of mud and sand, at a cost of 22·03 cents per cubic yard, and completing the depth to eight feet at low water.

DREDGING AT MORELL, KING'S COUNTY.

The dredge 'Prince Edward' operated here from September 11 to November 27, 1903, and from May 14 to June 30, 1904, cutting a channel 8 feet in depth, 60 feet in width, through the Morell bar, removing 28,755 cubic yards earth, sand, mud, clay and stone, at a cost of 30·82 cents per cubic yard; the work was being prosecuted at the close of the fiscal year 1903-04.

DREDGING AT VERNON RIVER BRIDGE, QUEEN'S COUNTY.

The dredge 'Prince Edward' was employed here from August 14 to September 10, 1903, removing 7,380 cubic yards of sand and mud, improving the depth of water in the channel and at the public wharf there, at a cost of 26·63 cents per cubic yard.

PROVINCE OF NEW BRUNSWICK.

DREDGING AT CARAQUET, GLOUCESTER COUNTY.

Caraquet, a port of entry in Gloucester county, on Caraquet bay, and an inlet of the Baie des Chaleurs, 48 miles E.N.E. of Bathurst. It is an important fishing station. There is a lighthouse on Caraquet island, at the entrance to the harbour. Population about 4,074. A contract for the construction of a new wharf was awarded, and the dredge 'Cape Breton' was engaged from July 18 to September 15, 1903, preparing the foundation, at a depth of 22 feet, for the cribs, and removing 16,485 cubic yards of sand, at a cost of 38·29 cents per cubic yard. The work was completed.

DREDGING AT GAGETOWN, QUEEN'S COUNTY.

The dredge 'New Brunswick' operated here, from August 6 to 16, 1903, widening and deepening the old dugway, and from November 6 to 14, the same year, in the creek and at the wharf, deepening and improving the channel by the removal of 6,870 cubic yards of clay, mud and silt, at a cost of 15·96 per cubic yard. The dredge 'New Dominion' also worked here from November 3 to 6, 1903, improving the lower entrance to the creek, by removing 5,475 cubic yards of mud, at a cost of 12·34 cents per cubic yard, and completing that portion of the work.

DREDGING AT GRAND LAKE FLATS, QUEEN'S COUNTY.

The dredge 'New Dominion' was engaged dredging here from July tember 6, and September 20 to October 16, 1903, removing 48,625 cubic yar and completing the channel 8,875 feet in length, 75 feet wide and 10 feet d the head of the Jemseg river into the Grand Lake.

DREDGING AT THE INTERCOLONIAL RAILWAY, ST. JOHN CITY.

The dredge 'New Dominion' was employed here from April 13 to Ma opening a channel fifty feet wide, seven feet deep at low water, 150 feet in the end of the old Intercolonial Railway wharf, removing 9,650 cubic yar at a cost of 22·81 cents per cubic yard; also driving nine piles for securi to.

DREDGING AT NEGUAC, NORTHUMBERLAND COUNTY.

The dredge 'Cape Breton' was engaged here from September 16 to N 1903, opening a channel to the public wharf at Neguac, where part of the rock, and resulted in breaking the dredge machinery, after removing 6,300 c at a cost of $1.10·63 per cubic yard, when the dredging closed for the season

The Fowlie dredge was engaged, from June 7 to July 4, 1904, in clean coaming left by the 'Cape Breton,' and dredging a channel farther along t wharf, 1,205 cubic yards stone, mud and gravel were removed, at a cost of $1 per cubic yard, leaving the work to be completed.

DREDGING AT OROMOCTO SHOALS, SUNBURY COUNTY.

The dredge 'New Brunswick' was engaged improving the Oromocto Sh August 17 to November 5, 1903, removing 44,360 cubic yards sand and incr depth of water to 11 feet, through a narrow channel, at a cost of 10·31 cubic yard.

DREDGING AT POINT DUCHENE, WESTMORLAND COUNTY.

As stated in my report of last year, Point Duchene is situated on North strait and is the north-east terminus of the Shediac branch of the Intercol way, 2 miles from Shediac. It has long piers for shipping, and range light diac island (at the entrance) and on the pier-head.

The Prince Edward Island Steam Navigation Company steamers run between this port and Summerside, Prince Edward Island, while navigatio and connects with the trains. It contains several stores, two or three hotels, and express offices, &c., and a population of about 250. Here is Shediac the easiest of access and egress on this part of the coast. It is superior to and Cocagne in the depth over the bar, and more extensive than the latter. for mooring shipping with 12 to 17 feet low water, being three-quarters of length, and from two to three cables wide, and is a secure harbour. Th about Shediac is fertile and well settled. The improvement of the cha Chene Spit to and along the piers by dredging has occupied the attenti department for several years. In 1874-75, the 'Canada' worked here: als 83 and 1883-84, and in 1890-91, the dredge 'St. Lawrence' giving a tot excavated to that date, of 69,700 cubic yards, at a cost of $21,125.92. A d feet at low water spring tides was made. Spring tides rise 2 feet, neaps 2 dredge 'Cape Breton' was engaged here from November 1 to 30, 1902, a to June 30, 1903, in completing a 15 foot channel, one hundred feet wi water, from the line of the range lights on Shediac island, to the outer e

public wharf, and a basin in front of the wharf to 19 feet, 360 feet in length, 140 feet wide, removing 40,110 cubic yards, at a cost of $4,915.80 or 12·25 cents per yard, and was still prosecuting the work at the close of the fiscal year 1902-03.

From July 1 to 17, 1903 the dredge 'Cape Breton' continued the work to its completion, removing 8,295 cubic yards sand and mud, at a cost of 20·55 cents per cubic yard.

DREDGING AT QUEEN'S COAL COMPANY, QUEEN'S COUNTY.

The dredge 'New Dominion' operated here from September 7 to 19, and October 17 to November 2, 1903, opening a channel through a bar and forming a basin at Newcastle to enable Messrs. J. S. Gibbon, to ship coal from their mines at that place, removing 14,475 cubic yards at a cost of 9·22 cents per cubic yard.

DREDGING AT RICHIBUCTO BAR, KENT COUNTY.

The dredge 'St. Lawrence' operated here from July 7 to November 16, 1903, improving the Richibucto bar by cutting a channel 100 feet wide to a depth of 15 feet through the reef and Jib Sheet shoals, removing 35,550 cubic yards of sand, at a cost of 29·31 cents per cubic yard, and completing the channel through.

DREDGING AT SPRINGHILL, RUSSELL BAR, YORK COUNTY.

The dredge 'New Brunswick' continued the dredging here, from July 1 until August 5, 1903, improving the inland navigation at the Russell and Chapel bars, removing 5,560 cubic yards of gravel and sand, at a cost of 28·51 cents per cubic yard.

DREDGING AT WINTER PORT BERTHS, ST. JOHN CITY AND COUNTY.

The dredge 'New Dominion' operated at the winter port berths, St. John harbour, when tides and weather would permit, from January 28 to April 12, and from May 13 to June 30, 1904, removing 32,950 cubic yards of mud, at a cost of 19·27 cents per cubic yard, and was continuing the work vigorously when the fiscal year closed.

The dredge 'New Brunswick' also operated here, from February 18 to June 30, 1904, removing 21,130 cubic yards of mud, at a cost of 28·11 cents per cubic yard, when the dredge was withdrawn, and sent to the Washademoak lake, for work at that place.

MARITIME PROVINCES DREDGES.

The Dredge 'St. Lawrence.'

At the beginning of the fiscal year 1903-04, the dredge 'St. Lawrence' was at Pictou, N.S., waiting orders. It proceeded to Richibucto, where it began operations on the bar at the entrance to the harbour of Richibucto, in Kent county, N.B., on July 7, and continued until November 16, opening a channel 100 feet wide, 15 feet deep, through the Reef and Jib Sheet shoal. The above work being completed and the weather stormy, the dredge was ordered to Pictou, where it went into winter quarters on the marine slip, and during the winter had necessary repairs and renewals made to the hull, boiler, engines and dredging machinery; the hull was cleaned and painted, and was ready to launch when the ice in the harbour permitted. On receipt of orders the crew were shipped and dredging commenced at the Intercolonial Coal Mining Company's pier, at Skinner's or Abercrombie point, on the East river, Pictou

county, where it was engaged from May 17 to June 2, and again from Jun and 3 to 7, 1904, and from June 11 to 24, was engaged improving the cha the main channel into the Harbour Commissioners' wharf, known as th wharf, and from June 25 to 30, 1904, it was engaged improving the bar trance to Pictou harbour, to 19 feet at low water spring tides, vigorously pu work at the close of the fiscal year.

The Dredge 'Canada.'

At the beginning of the fiscal year 1903-04, the dredge 'Canada' was ope the bar and channel at Liverpool, Queen's county, N.S., where it contin August 31, completing the channel through the bar, and the harbour to 13 f water spring tides. From September 1 to December 15, the dredge was e Barrington, Shelburne county, N.S., deepening and improving the Sherro to 12 feet. At the latter date, under orders, it proceeded to Yarmouth, to w repair. During the winter and early spring, the necessary extensive repairs on the marine slip, hull painted, dredge launched, crew shipped, and alter the tide answered, the dredge operated at the marine slip, and in the channe of the steamboat wharfs, in Yarmouth, from June 17 to 30, 1904, when it orders to return to Barrington to resume work there.

The Dredge 'New Dominion.'

At the commencement of the fiscal year 1903-04, this dredge was operati Grand Lake Flats, Queen's county, N.B., and continued there until Septembe when under orders it was removed to Newcastle, Queen's county, and dredge nel through a bar for the Queen's Coal Company until September 19, returned to the Grand Lake Flats and resumed work there, and by October pleted the channel 8,875 feet in length, 75 feet wide, 10 feet deep, from th the Jemseg river, into deep water, in the Grand lake. The dredge was orde turn to Newcastle to dredge a basin for the Queen's Coal Company, which was by November 2, the channel through the sand bar and a basin inside, were c enabling vessels to ship coal. The dredge was now ordered to Gagetown, was employed from November 3 to 6, removing a point at the entrance to town creek. This work being completed and the weather bad, the dredge wa to St. John for winter quarters. Repairs to mud scows were immediately c and completed January 28, 1904, when the dredge was ordered to work at t port wharfs, for the city of St. John. The dredge and plant were immedia ready, and the work continued from January 28 to June 30, except when from April 13 to May 12, dredging a basin in front of the Intercolonial Railw at York Point.

The Dredge 'Prince Edward.'

On July 1, 1903-04, this dredge was operating at Halliday's wharf, Belfas county, Prince Edward Island, and continued there until August 13, when completed and the dredge removed to the Vernon river bridge, where it wo August 14 until September 10, improving the channel and berths at the wh the dredge removed to Morrell, St. Peter's bay, Kings county, Prince Edwa where it operated from September 11 to November 27, opening a channel th bar. At the last mentioned date the weather being bad and ice making, a basi pared at the public wharf, at the head of St. Peter's bay, and the dredge a placed in winter quarters there. During the winter and spring, the necessa were made to dredge, hull and machinery, and scows by May 13, when dredgi sumed at Morrell, and was being vigorously prosecuted at the close of fi 1903-04.

The Dredge 'George McKenzie.'

At the beginning of the fiscal year 1903-04, this dredge was operating at Mabou, Inverness county, N.S., improving the channel at that place to ten feet at low water spring tides, and finishing there on August 24, 1903, it proceeded to Port Hood and there improved the channel near the coal piers of the Port Hood Coal Company, at the public wharf, and Smith's wharf until October 1, when the dredge was removed to Eastern harbour, Cheticamp, in the same county, where it operated, weather permitting, until November 27, when it was placed in winter quarters. During the winter and spring the dredge's hull and machinery and scows were put in order and ready for work. In the spring of 1904, dredging was resumed at Cheticamp and was in progress at the close of the fiscal year.

The Dredge 'Cape Breton.'

At the opening of the fiscal year 1903-04, this dredge operating at Point du Chene in Westmorland county, New Brunswick, continuing there until July 17, when it completed the channel out to the range lights at the harbour entrance. The dredge was transferred to Caraquet, in Gloucester county, New Brunswick, where dredging to 22 feet at low water spring tides was done to prepare the foundation of a new wharf; also in deepening the water around the old wharf at that place, all of which was completed by September 15. The dredge was then removed to Neguac, Northumberland county, New Brunswick, and continued there until November 2, when 6,300 yards had been removed, and owing to having encountered rock the machinery was broken, and the work stopped. The season being late and the dredge and barges requiring to go on the marine slip for repairs, the plant was removed to Pictou, and necessary repairs completed. From May 25 to June 3, the dredge was engaged improving the depth of water at the Acadia Coal Company's loading piers at Pictou landing in Pictou harbour, Nova Scotia, and from June 4 to 14, in opening a channel from the main channel to Hogg, Craig & Co.'s wharf at Pictou, and June 15 and 16, giving greater depth to water at Burham & Morrell's wharf at Pictou, and from June 17 to 22, in operating at the Intercolonial Railway wharf at Pictou landing in Pictou harbour. Then from June 23 to 30, at the Harbour Commissioner's wharf (known as Market wharf) at Pictou, when the plant was removed to Eastern harbour, Cheticamp, Inverness county, Nova Scotia.

The Dredge 'New Brunswick.'

At the beginning of the fiscal year 1903-04, this dredge was operating on the Russell bar, St. John river, York county, New Brunswick, and continued work there until August 5, when the water was getting too low on the bar, the dredge and plant were removed to Gagetown canal, Queen's county, New Brunswick, where it operated from August 6 to 16, and then removed to the Oromocto shoal in Sunbury county, New Brunswick, where it operated from August 17 to November 5, when it returned to Gagetown and dredged from November 6 to 14 in further improving the channel there. The plant was then removed to St. John, into winter quarters there. The dredge was made ready, and on February 18, 1904, began dredging for the winter port improvements, St. John Harbour, which it continued until June 30, when the dredge was ordered to work on the Washademoak, on the St. John river.

The Tug 'Cricket.'

This tug attended and served the dredge 'New Brunswick' during the year, except while the dredge operated at the winter port berths for the city of St. John; the dredge was then attended to by the Messrs. Tapleys' tugs, and for a time by tug 'Rona.'

The Tug 'Rona.'

The tug 'Rona,' a new tug purchased by the department, was fitted tended the dredge 'New Brunswick' at the winter port work from Ma May 14, when it joined the dredge 'Geo. McKenzie' at Cheticamp and i be a good vessel for the service.

Memorandum of quantities removed by the several dredges in the m vinces during the fiscal year 1903-1904:—

	Cubic
'St. Lawrence'	51
'Canada'	33
'New Dominion'	111
'Prince Edward'	49
'Geo. McKenzie'	19
'Cape Breton'	54
'New Brunswick'	77
Fowlie's dredge	1
	398

DREDGE VESSELS REPAIRS AND WINTERING, ETC.

Maritime Provinces.

The following amounts were expended on repairs and renewals to plant, during the year 1903-1904 :—

'St. Lawrence'	$ 4,272
'Canada'	7,547
'New Dominion'	2,084
'Prince Edward'	2,934
'Geo. MacKenzie'	1,613
'Cape Breton'	3,841
'New Brunswick'	738
Tug 'Cricket'	378
" 'Rona'	31
	$23,443

NEW DREDGING PLANT.

Tug 'Rona'	$ 2,577

DREDGING PLANT.

The following is a summary description of the dredging plant owned and operated by the Public Works Department in the Maritime provinces :—

The self-propelling Elevator Dredge 'St. Lawrence' (iron hull).

Length over all—175 feet.
Beam—30 feet.
Draft when loaded aft—13·5 feet.
Draft when loaded forward—8·5 feet.
Least working depth (ladder with 32 buckets dropped 30 feet from bow) 8·5 feet.
Greatest working depth (bucket ladder dropped 40 feet from bow)—28 feet.
Capacity of hopper for spoil material—350 cubic yards.
Speed when light—6 to 7 miles per hour.
Speed when loaded—3 to 4 miles per hour.
Daily rate of dredging hard material—350 to 700 cubic yards.
" " ordinary earth—750 to 1,000 cubic yards.
" " soft material—1,050 to 1,400 cubic yards.

The self-propelling Elevator Dredge 'Canada' (iron hull).

Length over all—130 feet.
Beam—20 feet.
Draft when loaded aft—11·5 feet.
Draft when loaded forward—7 feet.
Least working depth—7 feet.
Greatest working depth (ladder, 24 buckets)—16 feet.
Capacity of hopper for spoil material—90 cubic yards.
Speed when light and newly painted—6 to 7 miles per hour.
Speed when loaded—3 to 4 miles per hour.
Daily rate of dredging in hard bottom—180 to 270 cubic yards.
" " with ordinary digging—180 to 360 cubic yards.
" " in soft material—360 to 450 cubic feet.

The Spoon Dredge 'New Dominion' (wooden hull).

Length over all—90 feet.
Width—28 feet.
Draft—5½ feet.
Greatest working depth—21 feet.
Daily rate of dredging in hard material—300 cubic yards.
" " with ordinary material—450 cubic yards.
" " in soft material—600 to 700 cubic yards.
Number of dump scows or barges used—4 (2 are condemned).

The Spoon Dredge 'Prince Edward' (wooden hull).

Length over all—80 feet.
Width—28 feet.
Draft—6 feet.
Greatest working depth—21 feet.
Daily rate of dredging in hard material—300 cubic yards.
" " with ordinary material—500 cubic yards.
" " in soft material—600 to 700 cubic yards.
Number of dump scows or barges used—3.

The Spoon or Dipper Dredge 'George McKenzie' (wooden hull).

Length—90 feet.
Width—28 feet.
Draft—6 feet.
Greatest working depth—22 feet.
Daily rate of dredging in hard material—350 cubic yards.
" " with ordinary material—500 cubic yards.
" " in soft material—600 cubic yards.
Number of dump scows or barges used—3.

The Boom and Dipper Dredge 'Cape Breton' (steel hull).

Length—91 feet.
Beam—36 feet.
Draft—7½ feet.
Greatest working depth—34 feet.
Daily rate of dredging hard material—1,000 cubic yards.
" " ordinary material—1,500 cubic yards.
" " soft material—2,000 cubic yards.
Number of barges used (each of 210 cubic yards capacity—steel)—2.

The Clam Shell Dredge 'New Brunswick' (wooden hull).

Length over all—90 feet.
Width—25 feet.
Draft—2½ feet.
Greatest working depth—17 feet.
Daily rate of dredging in hard material—180 cubic yards.
" " ordinary material—300 cubic yards.
" " soft material—450 cubic yards.
Number of decked scows used—3.

Tug 'Cricket.'

Length—36·5 feet.
Beam—7·3 feet.
Draft—3·10.
Horse power—4.

Tug 'Rona.'

Length—85 feet.
Beam—19·3 feet.
Draft—8 feet.
Horse power—25.
One pile-driver, engine and boiler fitted on scow.
One stone lifter, engine and large grips (no boiler).

CLASSIFICATION of Disbursements of the Dredges in the Maritime Provinces during the Year ending June 30, 1904.

DREDGE 'ST. LAWRENCE.'

ITEMS.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Total.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	483 33	483 33	549 00	483 33	489 56	483 33	466 55	262 33	262 33	262 33	486 91	561 33	5,273 66
Coal	135 00	735 00	.....	345 00	30 00	.....	.....	.....	126 05	.....	174 38	320 62	1,866 05
Provisions	145 64	136 67	109 49	145 52	100 66	148 79	128 11	.....	.....	.....	179 37	148 48	1,242 73
Stores	6 00	.....	.....	27 09	12 88	61 71	.....	.....	35 40	.....	61 59	2 00	206 67
Equipment	197 02	.....	.....	.....	.....	.....	.....	.....	53 62	223 67	.....	.....	474 31
Water	5 30	.....	.....	29 00	18 00	.....	.....	.....	4 00	.....	.....	.....	56 30
Repairs	194 45	27 30	.....	.....	165 35	3 05	27 35	159 56	656 97	328 30	819 91	17 78	2,400 02
Pilotage	60 00	78 00	.....	81 00	66 00	.....	.....	.....	.....	.....	.....	.....	285 00
Towage	10 00	.....	.....	10 00	10 00	.....	.....	.....	.....	.....	.....	.....	30 00
Wharfage	20 00	.....	.....	.....	134 00	8 25	.....	.....	.....	.....	18 00	31 00	211 25
Contingencies	12 42	5 02	2 35	.....	7 17	8 25	.....	2 35	14 15	5 28	.....	9 04	66 03
Totals	1,269 16	1,465 32	660 84	1,120 94	1,033 62	713 38	622 01	424 24	1,152 52	819 58	1,740 16	1,090 25	12,112 02
Working expenses	1,074 71	1,438 02	660 84	1,120 94	868 27	227 00	Nil.	Nil.	233 22	223 67	920 25	1,072 47	7,839 39
Repairs ordinary	Nil.	27 30	Nil.	Nil.	165 35	Nil.	Nil.	Nil.	4 38	Nil.	703 75	17 78	918 56
" extraordinary	194 45	Nil.	Nil.	Nil.	Nil.	486 38	622 01	424 24	914 92	595 91	116 16	Nil.	3,354 07
Totals	1,269 16	1,465 32	660 84	1,120 94	1,033 62	713 38	622 01	424 24	1,152 52	819 58	1,740 16	1,090 25	12,112 02

DREDGE 'CANADA'.

Wages	478 46	430 48	426 85	430 00	428 50	385 85	222 00	278 25	367 25	283 37	370 18	456 29	4,557 48
Coal	255 35	367 35	500 00	5 00		91 55						130 13	1,349 38
Provisions	98 15	105 86	87 48	88 75	74 43	65 60					72 79	116 21	709 27
Stores	4 99	14 38		11 60	5 73	16 17		1 63			98 51	169 73	322 74
Equipment	4 50								48 12		24 08	97 72	174 42
Water	5 00	5 00	14 90	15 00	20 18	7 50							67 58
Repairs	16 38	37 06				185 11	33 79	128 16	472 53	142 38	545 91	4,901 55	6,462 87
Pilotage		36 00	44 00	54 00	50 00	35 50							219 50
Towages									10 00			10 00	20 00
Wharfage	15 00	15 00											30 00
Contingencies	62 43	4 00	10 02	3 29	1 90	5 41	5 15	2 49	13 95		8 68	7 70	125 02
Totals	940 26	1,015 13	1,083 25	607 64	580 74	792 69	260 94	410 53	911 85	425 75	1,120 15	5,889 33	14,038 26
Working expenses	923 88	978 07	1,083 25	607 64	580 74	607 58	13 94	N l	133 28	Nil.	574 24	987 78	6,490 40
Repairs, ordinary	16 38	Nil.	Nil.	Nil.	Nil.	4 77	Nil.	Nil.	Nil-	Nil.	343 83	4,901 55	5,266 63
" extraordinary	Nil.	37 06	Nil.	Nil.	Nil	180 34	247 00	410 53	778 57	425 75	202 08	Nil.	2,281 33
Totals	940 26	1,015 13	1,083 25	607 64	580 74	792 69	260 94	410 53	911 85	425 75	1,120 15	5,889 33	14,038 26

DREDGE 'NEW DOMINION'

Wages	367 33	370 00	360 62	358 15	339 83	526 20	518 11	405 02	387 57	409 64	509 03	390 55	4,942 05
Coal			194 75		298 03			60 00	90 00	144 03	154 66	142 60	1,084 07
Provisions	80 63	94 66	80 36	54 58	21 48		19 72	74 29	125 74	89 20	92 61	100 52	833 79
Stores			3 84				7 04	24 06	47 06			15 00	97 00
Equipment									204 89		59 14		264 03
Water		12 00							102 00		108 50	68 38	290 88
Repairs		9 51	2 64	14 35	35 83	273 75	245 82	187 05	11 31	129 50	113 40	115 83	1,138 99
Pilotage													
Towage	520 00	530 00		1,120 00	370 00			447 00	705 00	739 00	651 00	780 00	5,862 00
Wharfage													
Contingencies	0 27		2 37	0 29	6 85	2 87	0 30	0 66	0 52	1 00		6 82	21 95
Totals	968 23	1,016 17	644 58	1,547 37	1,072 02	802 82	790 99	1,198 08	1,674 09	1,512 37	1,688 34	1,619 70	14,534 76
Working expenses	968 23	1,006 66	642 21	1,533 02	1,004 69	8 87	213 91	986 01	1,656 03	1,351 73	1,574 94	1,503 87	12,450 17
Repairs, ordinary	Nil.	Nil.	2 37	Nil.	Nil.	Nil.	20 00	Nil.	Nil.	59 80	113 40	115 83	311 40
" extraordinary	Nil.	9 51	Nil.	14 35	67 33	793 95	557 08	212 07	18 06	100 84	Nil.	Nil.	1,773 19
Totals	968 23	1,016 17	644 58	1,547 37	1,072 02	802 82	790 99	1,198 08	1,674 09	1,512 37	1,688 34	1,619 70	14,534 76

CLASSIFICATION of Disbursements of Dredges in the Maritime Provinces, &c.—*Continued.*

DREDGE 'PRINCE EDWARD.'

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Total.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	395 00	391 07	401 59	385 00	385 00	264 36	150 00	183 28	325 74	690 08	748 94	429 40	4,749 46
Coal			6 50	119 30	85 37	7 75		177 80	2 70	11 00		98 49	508 91
Provisions		61 28	204 31	10 86	152 68	70 96					18 00	227 87	745 96
Stores			17 69										17 69
Equipment			41 84			99 46				142 40			283 70
Water			118 65	67 80	52 50						39 70	64 95	343 60
Repairs				9 85	27 00	61 32		273 46	168 69	3 25	135 56	896 97	1,576 10
Pilotage			35 00		52 00								87 00
Towage	650 00	637 50	1,215 00	550 00	550 00						362 50	650 00	4,615 00
Wharfage													
Contingencies			8 75	44 74	20 43		6 95		10 80	6 25	2 62	40 45	140 99
Totals	1,045 00	1,089 85	2,049 33	1,187 55	1,324 98	503 85	156 95	634 54	507 93	852 98	1,307 32	2,408 13	13,068 41
Workings expenses	1,045 00	1,089 85	2,049 33	1,177 70	1,297 98	442 53	Nil.	177 80	10 80	159 65	1,171 76	1,511 16	10,133 56
Repairs, ordinary	Nil.	Nil.	Nil.	Nil.	27 00	61 32	Nil.	Nil.	Nil.	Nil.	135 56	896 97	1,120 85
" extraordinary	Nil.	Nil.	Nil.	9 85	Nil.	Nil.	156 95	456 74	497 13	693 33	Nil.	Nil.	1,814 00
Totals	1,045 00	1,089 85	2,049 33	1,187 55	1,324 98	503 85	156 95	634 54	507 93	852 98	1,307 32	2,408 13	13,068 41

DREDGE 'GEO. MCKENZIE.'

Wages	474 25	393 69	395 34	399 73	393 75	280 15	155 00	152 50	355 21	441 49	336 47	474 50	4,252 08
Coal		85 56		164 00		75 00						308 70	633 26
Provisions	47 79	132 87	119 92	60 22	55 38	43 48					100 02	87 02	646 70
Stores			5 60	21 16	3 69		8 30				76 51		115 26
Equipment	101 68			258 45							109 00		469 13
Water		51 00	37 41	42 00	102 00								232 41
Repairs				5 76		84 20		12 93	88 73	297 52		6 00	495 14
Pilotage	7 00												7 00
Towage	1 110 00	650 00	200 00	1,425 00	625 00							270 00	4,280 00
Warfage	20												20
Contingencies	13 42	9 48	7 51	16 46	39 31	7 45	91		4 63	72	18 59	1 89	120 37
Totals	1,754 34	1,322 60	765 78	2,392 78	1,219 13	490 28	164 21	165 43	448 57	739 73	640 59	1,148 11	11,251 55
Working expenses	1,754 34	1,322 60	765 78	2,387 02	1,219 13	406 08					640 59	1,142 11	9,637 65
Repairs, ordinary				5 76		3 80						6 00	15 56
" extraordinary						80 40	164 21	165 43	448 57	739 73			1,598 34
Totals	1,754 34	1,322 60	765 78	2,392 78	1,219 13	490 28	164 21	165 43	448 57	739 73	640 59	1,148 11	11,251 55

DREDGE 'CAPE BRETON.'

Wages	435 00	435 00	423 97	423 98	427 26	403 77	140 00	160 00	179 94	255 00	310 41	482 80	4,017 13
Coal	180 55	361 57	567 77	112 50					23 31		92 43	162 34	1,500 47
Provisions	163 95	8 00	240 73	2 90	221 75	120 43					105 99	107 33	971 08
Stores					166 86	4 10		15 63	27 01		72 68		286 28
Equipment						10 00		7 50	43 58	147 90		191 32	400 30
Water	33 00	22 50	27 00		30 00							22 50	135 00
Repairs	10 00	13 09				521 46		59 39	176 33	487 09	35 86	1,383 52	2,686 74
Pilotage	25 00			20 00									45 00
Towage	800 31	1,140 63		1,225 00	2,905 00	214 93	25 00	300 00			13 00	965 00	7,588 87
Wharfage											24 00		24 00
Contingencies	2 00	9 16		21 16		6 58		5 46	8 15		9 55	7 18	69 24
Totals	1,649 81	1,989 95	1,259 47	1,805 54	3,750 87	1,281 27	165 00	547 98	458 32	889 99	663 92	3,261 99	17,724 11
Working expenses	1,639 81	1,976 86	1,259 47	1,805 54	3,750 87	356 04	25 00	323 13	91 39	147 90	628 06	1,878 47	13,882 54
Repairs, ordinary	10 00										35 86	1,383 52	1,429 38
" extraordinary		13 09				925 23	140 00	224 85	366 93	742 09			2,412 19
Totals	1,649 81	1,989 95	1,259 47	1,805 54	3,750 87	1,281 27	165 00	547 98	458 32	889 99	663 92	3,261 99	17,724 11

CLASSIFICATION of Disbursements of Dredges in the Maritimes Provinces, &c.—*Continued.*

DREDGE 'NEW BRUNSWICK'.

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Total.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	477 47	435 40	365 14	391 98	311 50	110 00	143 77	246 19	350 63	376 00	336 82	420 51	3,965 41
Coal	125 37	69 43	139 33					55 54	181 25		142 59	118 21	831 72
Provisions	210 00	175 07	147 43	164 57	121 28			13 70	60 06	163 99	152 86	81 05	1,290 01
Stores	9 60			6 07	4 51		2 00	43 64	0 45	42 78	42 65	21 03	172 73
Equipment	42 50			12 50					129 57				184 57
Water		12 50					5 00		72 50		83 88	45 63	219 51
Repairs				4 43		41 40	14 95	172 89	69 12	30 93	33 62	85 39	452 73
Pilotage													
Towage		140 00	809 45	540 00	343 30			111 00	160 00	27 50	361 50	561 00	3,053 75
Wharfage													
Contingencies	11 80	3 75			5 37	3 93	2 05					3 80	30 70
Totals	876 74	836 15	1,461 35	1,119 55	785 96	155 33	167 77	642 96	1,023 58	641 20	1,153 92	1,336 62	10,201 13
Working expenses	876 74	836 15	1,461 35	1,115 12	785 96	113 93	9 05	455 25	868 41	569 02	1,120 30	1,251 23	9,462 51
Repairs, ordinary	Nil.	Nil.	Nil.	Nil.	Nil.	41 40	Nil.	Nil.	Nil.	28 14	33 62	85 39	188 55
" extraordinary	Nil.	Nil.	Nil.	4 43	Nil.	Nil.	158 72	187 71	155 17	44 04	Nil.	Nil.	550 07
Totals	876 74	836 15	1,461 35	1,119 55	785 96	155 33	167 77	642 96	1,023 58	641 20	1,153 92	1,336 62	10,201 13

TUG 'CRICKET.'

Wages	107 90	85 00	81 42	85 00	86 46	.....	.....	.....	.....	51 75	.....	41 88	539 41
Coal	22 40	165 56	131 25	.....	.....	.....	.....	.....	.....	.....	.....	.....	319 21
Provisions	39 00	39 86	24 86	26 57	22 28	.....	.....	.....	.....	.....	.....	.....	152 57
Stores	6 19	3 70	.....	3 40	.....	.....	.....	.....	.....	.....	.....	.....	13 29
Equipment	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Water	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Repairs	.....	.....	.....	23 96	.....	.....	.....	.....	92 80	1 98	170 02	26 57	315 33
Pilotage	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Towage	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wharfage	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Contingencies	.....	.....	.....	.....	1 35	.....	.....	.....	.....	.....	.....	70	2 05
Totals	175 49	294 12	237 53	138 93	110 09	Nil.	Nil.	Nil.	92 80	53 73	170 02	69 15	1,341 86
Working Expenses	175 49	294 12	237 53	114 97	99 09	.....	.....	.....	Nil.	Nil.	Nil.	42 58	963 78
Repairs, ordinary	Nil.	Nil.	Nil.	Nil.	Nil.	.....	.....	.....	Nil.	Nil.	170 02	26 57	196 59
" extraordinay	Nil.	Nil.	Nil.	23 96	11 00	.....	.....	.....	92 80	53 73	Nil.	Nil.	181 49
Totals	174 49	294 12	237 53	138 93	110 09	Nil.	Nil.	Nil.	92 80	53 73	170 02	69 15	1,341 86

TUG 'RONA.'

Wages	.....	.....	.....	.....	.....	.....	.....	.....	169 79	211 64	195 79	190 00	767 22
Coal	.....	.....	.....	.....	.....	.....	.....	.....	131 63	124 77	41 87	124 90	423 17
Provisions	.....	.....	.....	.....	.....	.....	.....	.....	33 78	39 11	119 58	33 58	226 05
Stores	.....	.....	.....	.....	.....	.....	.....	.....	6 00	34 88	1 25	.....	42 13
Equipment	.....	.....	.....	.....	.....	.....	.....	.....	27 49	1 40	.....	.....	28 89
Water	.....	.....	.....	.....	.....	.....	.....	.....	.....	9 39	.....	25 02	34 41
Repairs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pilotage	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Towage	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wharfage	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3 00	.....	3 00
Contingencies	.....	.....	.....	.....	.....	.....	.....	.....	2 25	.....	4 90	5 87	13 02
Totals	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	370 94	421 19	366 39	379 37	1,537 89
Working expenses	.....	.....	.....	.....	.....	.....	.....	.....	370 94	389 55	366 39	379 37	1,506 25
Repairs, ordinary	.....	.....	.....	.....	.....	.....	.....	.....	Nil.	Nil.	Nil.	Nil.	Nil.
" extraordinary	.....	.....	.....	.....	.....	.....	.....	.....	Nil.	31 64	Nil.	Nil.	31 64
Totals	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	370 94	421 19	366 39	379 37	1,537 89

CLASSIFICATION AND QUANTITIES of Material removed by Dredges in the Maritime Provinces during the Year ending June 30, 1903.

DREDGE 'ST. LAWRENCE.'

Description of Material Dredged.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Total.
	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.
Clay and stone												1,750	1,750
Clay and mud											1,050	350	1,400
Mud and stone											1,400		1,400
Sand—ordinary	7,000	8,400	9,100	4,900	3,150							1,750	34,300
Mud											3 850	8,400	12,250
Totals	7,000	8,400	9,100	4,900	3,150						6,300	12,250	51,100

DREDGE 'CANADA.'

Sawdust		900											900
Mud and shells		2,970											2,970
Mud and coal												630	630
Clay and mud												720	720
Sand—ordinary and sawdust	4,140	270											4,410
Sand—and mud	720				4,500								5,220
Mud	180	2,430	5,490	4,950	1,890	2,610						810	18,360
Totals	5,040	6,570	5,490	4,950	6,390	2,610						2,160	33,210

DREDGE 'NEW DOMINION.'

Stone, mud & edgings												10,575	10,575
Gravel			1,590										1,590
Gravel and mud			2,685										2,685
Clay and mud	12,900	15,275	8,075	1,800									38,050
Sand, clay and mud				5,325									5,325
Stone and mud								3,675			2,325		6,000
Sand—very fine & mud			1,425		6,150								7,575
Mud	4,050	1,200	75	8,025				1,625	9,150	9,550	5,700		39,375
Totals	16,950	16,475	13,850	15,150	6,150			5,300	9,150	9,550	8,025	10,575	111,175

DREDGE 'PRINCE EDWARD.

Mud and shells		2,700											2,700
Sand			675	6,030	2,700								9,405
Clay and stone												5,625	5,625
Clay, sand and shells	810											1,755	2,565
Sand, clay and shells											4,995		4,995
Sand—ordinary & clay	9,000	3,555			1,395								13,950
Sand—very fine & mud		2,070	2,745										4,815
Clay and rock												5,445	5,445
Totals	9,810	8,325	3,420	6,030	4 095						4,995	12,825	49,500

DREDGE 'GEO. McKENZIE.'

Sand, hard-pan, and gravel	900												900
Sand and stone			405	180							225		810
Sand—ordinary and gravel	1,260	3,245											4,505
Sand		225	2,160	1,835	660						1,125	6,930	12,935
Totals	2,160	3,470	2,565	2,015	660						1,350	6,930	19,150

CLASSIFICATION AND QUANTITIES of Material removed by Dredges in the Maritime Provinces, &c.—*Continued.*

DREDGE 'CAPE BRETON.'

Description of Material Dredged.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Total.
	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.
Sand and shells	840		840										1,680
Clay, rock and sand											1,785	1,260	3,045
Clay											3,570	16,310	19,880
Sand and ledge				6,300									6,300
Clay and sand		6,300											6,300
Sand—and mud	2,100		4,410										6,510
Sand—ashes	3,360	4,305	630									840	9,135
Mud	1,995												1,995
Totals	8,295	10,605	5,880	6,300							5,355	18,410	54,845

DREDGE 'NEW BRUNSWICK.'

Rock and Gravel	3,185	665											3,850
Sand and mud					5,850								5,850
Gravel	1,710												1,710
Clay		2,320			450						1,100		3,870
Clay and edgings								840	4,250	3,300			8,390
Sand—ordinary		7,370	15,785	16,830	875								40,860
Sand—and sawdust				1,750									1,750
Mud, sticks, logs & rock					320				1,050	1,450	3,350	5,470	11,640

DREDGE 'F. A. FOWLIE'S DREDGE.'

Mud and stone	....	....	....	....	....	....	....	....	....	....	....	1,205

DETAILS OF DREDGING IN THE MARITIME PROVINCES.

For the Fiscal Year ended June 30, 1904.

Dredge.	Locality.	Date.	Time Dredging.	Quantity. Cubic Yards.	Expenditure at Locality.	Per Cubic yard for Local Expenditure.	Wintering, Repairs, Equipment and Superintendence, *pro rata*.	Total Cost.	Per Cubic Yard for Total Expenditure.
			Hrs. Min.		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
St. Lawrence....	Richibucto, Kent Co., N.B.....	July 7 to Nov 16, 1903.....	183 55	32,550	4,606 39	0 14·15	4,936 43	9,542 82	0 29·31
	Skinner's Point New Pier, Pictou, Pictou Co., N.S	May 17 to June 2 and June 8 to 10, 1904	53 20	7,700	762 84	0 09·90	817 48	1,580 32	0 20·52
	Main Channel to Market Wharf, Pictou Co., N.S.....	June 3 to 7 and June 11 to 24 1904.	44 00	9,100	626 98	0 06·88	671 91	1,298 89	0 14·27
	Pictou Bar, Pictou Co., N.S	June 25 to 30, 1904.....	6 35	1,750	166 63	0 09·52	178 57	345 20	0 19·72
Canada	Liverpool, Queen's Co., N.S.....	July 1 to August 31, 1903.. ..	163 43	11,610	1,833 85	0 15·79	3,108 23	4,942 08	0 42·56
	Barrington, Shelburne Co., N.S.... ...	Sept. 1 to Dec. 15, 1903.	236 34	19,440	3,240 49	0 16·67	5,492 36	8,732 85	0 44·92
	Steamboat Wharf Yarmouth, Yarmouth Co., N.S.	June 17 to 30, 1904 alternately.	13 15	720	138 88	0 19·29	235 39	374 27	0 51·98
	Marine Slip Yarmouth, Yarmouth Co.,	June 17 to 30, 1904.....	24 25	1,440	277 76	0 19·29	470 71	748 47	0 51·97
New Dominion .	Grand Lake Flats, Queen's Co., N.B..	July 1 to Sept. 6 and Sept. 20 to Oct. 16, 1903..	672 00	48,625	3,780 39	0 07·77	977 39	4,757 78	0 09·78
	Queens Coal Co., Queen's Co., N.B....	Sept. 7 to 19 and Oct. 17 to Nov 2, 1903.....	196 00	14,475	1,060 80	0 07·32	274 26	1,335 06	0 09·22
	Gagetown, Queen's Co., N.B	Nov. 3 to 6, 1903.....	76 00	5,475	536 84	0 09·80	138 79	675 63	0 12·34
	Winter Berths St. John, St. John Co., N. B.....	Jan. 28 to April 12 and May 13 to June 30, 1904.....	474 30	32,950	5,046 07	0 15·31	1,304 62	6,350 69	0 19·27
	Intercolonial Ry. St. John Co., N.B..	April 13 to May 12, 1904	152 00	9,650	1,749 55	0 18·13	452 33	2,201 88	0 22·81
Prince Edward..	Hallidays Wharf, Queen's Co., P.E.I..	July 1 to Aug. 13, 1903.....	274 00	13,365	1,890 29	0 14·14	1,054 25	2,944 54	0 22·03
	Vernon River Bridge .. Co., P.E I..	Aug. 14 to Sept. 10, 1903.....	177 00	7,380	1,262 00	0 17·10	703 83	1,965 83	0 26·63
	Morrell, King's Co., P.E.I	Sept. 11 to Nov. 27, 1903 and May 14 to June 30, 1904.....	648 01	28,755	5,690 97	0 19·79	3,174 03	8,865 00	0 30·82
Geo. McKenzie .	Mabou, Inverness Co., N.S	July 1 to Aug. 24, 1904	152 00	5,405	2,676 98	0 49·52	1,163 28	3,840 26	0 71·05
	Port Hood, Inverness Co. N.S.	Aug. 25 to Oct. 1, 1904	98 00	2,970	1,447 98	0 48·75	629 20	2,077 18	0 69·94
	Eastern Harbour, Cheticamp, N.S....	Oct. 2 to Nov. 27, 1903 and May 25 to June 30, 1904.....	285 00	10,775	4,555 96	0 42·28	1,979 80	6,535 76	0 60·65

Cape Breton	Point du Chene, Westmorland Co., N.B.	July 1 to 17, 1903	49	15	8,295	854 30	0	10·29	850 46	1,704 76	0	20·55
	Caraquet, Gloucester Co., N.B.	July 18 to Sept. 15, 1903	84	15	16,485	3,163 23	0	19·18	3,149 00	6,312 23	0	38·29
	Neguac, Northumberland Co., N.B.	Sept. 16 to Nov 2, 1903	49	30	6,300	3,492 73	0	55·44	3,477 03	6,969 76	1	10·63
	Acadia Coal Pier, Pictou, Pictou Co., N.S.	May 25 to June 3, 1904	43	75	8,400	456 38	0	05·43	454 33	910 71	0	10·84
	Hogg, Craig & Co. Wharf, Pictou, Pictou Co., N.S.	June 4 to 14, 1904	29	00	6,090	603 50	0	09·91	600 79	1,204 29	0	19·77
	Burnham & Morill, Pictou, Pictou Co., N.S	June 15 and 16, 1904	5	00	1,050	105 83	0	10·08	105 36	211 19	0	16·90
	Intercolonial Ry. Wharf, Pictou, Pictou Co., N.S	June 17 to 22, 1904	18	00	3,395	287 69	0	08·47	286 39	574 08	0	16·90
	Market Wharf, Pictou, Pictou Co., N.S	June 23 to 30, 1904	23	00	4,830	398 85	0	08·25	397 05	795 90	0	16·47
New Brunswick	Russell Bar, York Co., N.B.	July 1 to Aug. 5, 1903	163	30	5,560	1,232 61	0	22·16	353 01	1,585 62	0	28·51
	Gagetown Wharf & Canal, Queen's Co., N.B	Aug. 6 to 16 and Nov. 6 to 14, 1903	118	00	6,870	851 49	0	12·40	243 86	1,095 35	0	15·96
	Oromocto Shoals Sunbury Co., N.B.	Aug. 17 to Nov. 5, 1903	614	30	44,360	3,556 20	0	08·01	1,018 47	4,574 67	0	10·31
	Winter Berths, St. John, St. John Co., N.B	Feb. 18 to June 30, 1904	561	45	21,130	4,617 45	0	21·85	1,322 42	5,939 87	0	28·11
			5690	18	396,900	60,971 91	0	15·36	40,021 03	100,992 94	0	25·44

Fowlie's Dredge, Neguac, Northumberland Co., N.B., June to 30, 1904, 1,205 yds.

EXPENDITURE for dredging in Nova Scotia for the Thirty-two years ended June 30, 1904.

County:	Locality.	TOTAL FOR THE THIRTY-ONE YEARS ENDED JUNE 30, 1903.			FOR THE YEAR 1903-04.			Total quantity. Cubic yards.	Total cost.	Cost for each County.
		Quantity. Cubic yards.	Cost.	Cost for County.	Quantity. Cubic yards.	Cost.	Cost for County.			
			$ cts.	$ cts.		$ cts.	$ cts.		$ cts.	$ cts.
Antigonish	Antigonish	22,025	3,649 15					22,025	3,649 15	
	Harbour Au Bouche	59,243	19,703 33					59,243	19,703 33	
	Tracadie	12,245	5,530 29					12,245	5,530 29	
	McNair's Cove	11,265	10,035 68					11,265	10,035 68	
	Bayfield	12,871	9,505 79					12,871	9,505 79	
	Arisaig	8,330	7,452 26					8,330	7,452 26	
	Cribbin's Point	4,675	4,125 19	60,001 69				4,675	4,125 19	60,001 69
Annapolis	Annapolis	2,825	1,635 68	1,635 68				2,825	1,635 68	1,635 68
Cape Breton	Lingan	22,267	9,275 56					22,267	9,275 56	
	Sydney	62,917	20,904 88					62,917	20,904 88	
	Little Glace Bay	46,450	16,936 02					46,450	16,936 02	
	Port Caledonia	17,413	8,242 21					17,413	8,242 21	
	Benacadie Pond	20,860	5,993 90					20,860	5,993 90	
	Christmas Island	19,045	3,364 98					19,045	3,364 98	
	Cow Bay	3,255	1,892 32					3,255	1,892 32	
	Main A Dieu	4,680	2,720 76					4,680	2,720 76	
	Louisburg	22,310	5,480 52					22,310	5,480 52	
	North Sydney (Coal & Steel Co)	15,190	6,648 45					15,190	6,648 45	
	" (Salter's Wharf)	630	315 01	81,774 61				630	315 01	81,774 61
Colchester	Tatamagouche	65,480	20,373 07	20,373 07				65,480	20,373 07	20,373 07
Cumberland	Parrsboro'	42,595	12 804 68					42,595	12,804 68	
	Wallace	93,865	24,140 37	36,945 05				93,865	24,140 37	36,945 05
Digby	Digby	35,740	11,009 10					55,740	11,009 10	
	Weymouth	88	28 62	11,037 72				88	28 62	11,037 72
Guysboro	Guysboro'	5,400	1,413 53					5,400	1,413 53	
	Larry's River	47,655	16,519 85					47,655	16,519 85	
	Port Mulgrave	4,347	2,494 81					4,347	2,494 81	
	Sherbrooke	1,260	496 49					1,260	496 49	
	Cook's Cove	16,815	7,336 29					16,815	7,336 29	
	St. Mary's River	81,812	22,352 04					81,812	22,352 04	
	Tickle Passage, Little Canso	3,015	4,477 97					3,015	4,477 97	
	Bar Sonora, St. Mary's River	5,628	2,204 33	57,295 31				5,628	2,204 33	57,295 31

Halifax	Chezzetcook	3,920	2,593 71					3,920	2,593 71		
	Halifax Ferry	6,177	2,063 38					6,177	2,063 38		
	Herring Cove	26,101	12,049 68					26,101	12,049 68		
	Ketch Harbour	4,227	1,690 53					4,227	1,690 53		
	Richmond Wharf	792	182 53					792	182 53		
	Roche's Wharf	1,750	620 28					1,750	620 28		
	Halifax Rly. terminus	35,565	11,056 79					35,565	11,056 79		
	Jeddore	21,515	4,958 56					21,515	4,958 56		
	North West Arm	7,350	2,970 39					7,350	2,970 39		
	Cunard's Wharf	1,400	530 04					1,400	530 04		
	Salmon River	14,288	5,962 93					14,288	5,962 93		
	Spry Bay	10,665	3,075 72					10,665	3,075 72		
	Eastern Passage	2,070	596 97					2,070	596 97		
	Sambro	4,815	1,388 61	49,740 12				4,815	1,388 61	49,740 12	
Inverness	Whycocomagh	19,760	3,491 31					19,760	3,491 31		
	Campbell's Pond	4,940	872 83					4,940	872 83		
	Port Hastings	270	190 37					270	190 37		
	Cheticamp	187,885	62,477 62		10,775	6,535 76		198,620	69,013 38		
	Mabou	128,347	49,126 92		5,405	3,840 26		133,752	52,967 18		
	Port Hood	7,153	3,619 81		2,970	2,077 18		10,123	5,696 99		
	Grand Etang	10,980	3,431 25	123,210 11			12,453 20	10,980	3,431 25	135,663 31	
Lunenburg	Lunenburg	70,510	22,194 57					70,510	22,194 57		
	Mahone Bay	21,844	5,958 65					21,844	5,958 65		
	Vogler's Cove	11,610	5,075 53	33,228 73				11,610	5,075 53	33,228 75	
Pictou	Acadia Coal Co., wharf	14,060	4,351 55		8,400	910 71		22,460	5,262 26		
	Albion Mines	9,475	2,181 25					9,475	2,181 25		
	East River	144,407	47,696 43					144,407	47,696 43		
	Halifax Coal Co., wharf	1,650	359 90					1,650	359 90		
	Pictou, Public Market, wharf	85,270	23,321 86		13,930	2,094 79		99,200	25,416 65		
	" Railway "	61,254	15,763 61		3,395	574 08		64,649	16,337 69		
	" Landing Ry. "	48,645	8,898 40					48,645	8,898 40		
	" Steam Ferry Co. Slip	720	246 18					720	246 18		
	" Bar	23,800	1,932 73		1,750	345 20		25,550	2,277 93		
	" Hogg, Craig & Co. whf.				6,090	1,204 29		6,090	1,204 29		
	" Burnham & Morrell				1,050	211 19		1,050	211 19		
	Vale Colliery	1,395	682 15					1,395	682 15		
	River John	85,173	22,243 98					85,173	22,243 98		
	Granton	25,110	10,707 59					25,110	10,707 59		
	New Glasgow	35,445	11,795 79					35,445	11,795 79		
	Middle River	15,060	4,984 40					15,060	4,984 40		
	C. Dwyer's wharf	5,400	1,087 66					5,400	1,087 66		
	" berths for ss. 'Campania'	5,850	2,000 22					5,850	2,000 22		
	Dwyer & Co.'s wharf	360	123 09					360	123 09		
	Intern'l Coal Mining Co., East River, Pictou	39,200	5,830 54	164,207 33	7,700	1,580 32	6,920 58	46,900	7,410 86	171,127 91	
Queen's	Liverpool	80,970	26,439 90		11,610	4,942 08		92,580	31,381 98		
	Port Mouton	10,620	2,283 77	28,723 67			4,942 08	10,620	2,283 77	33,665 75	
Richmond	D'Escousse	23,650	10,052 76					23,650	10,052 76		
	St. Peter's Canal	90,830	27,435 95					90,830	27,435 95		
	St. Peter's	7,150	2,407 41					7,150	2,407 41		
	Grand Goulet	23,584	5,570 49					23,584	5,570 49		

EXPENDITURE for dredging in Nova Scotia for the Thirty-two years ended June 30, 1904.

County.	Locality.	TOTAL FOR THE THIRTY-ONE YEARS ENDED JUNE 30, 1903.			FOR THE YEAR 1903-1904.			Total quantity. Cubic yards.	Total cost.	Cost for each County.
		Quantity. Cubic yards.	Cost.	Cost for County.	Quantity cubic yards.	Cost.	Cost for County			
			$ cts.	$ cts.		$ cts.	$ cts.			
Richmond- *Con.*	River Bourgeois	18,920	4,468 87					18,920	4,468 87	
	Marine Slip	320	56 53					320	56 53	
	Poulement	10,080	2,566 14					10,080	2,566 14	
	Fourchu Harbour	16,875	9,454 94	62,013 09				16,875	9,454 94	62,013 09
Shelburne	Lockeport	75,358	18,026 86					75,358	18,026 86	
	Barrington Passage	40,780	13,123 31					40,780	13,123 31	
	Osborne	990	145 31					990	145 31	
	Wood's Harbour	1,170	245 45					1,170	245 45	
	Barrington Public Wharf and Sherrow's Channel	9,090	1,074 02	32,614 95	19,440	8,732 85	8,732 85	28,530	9,806 87	41,347 80
Yarmouth	Yarmouth	418,942	113,012 59		2,160	1,122 74		421,102	114,135 33	
	Milton	663	499 46	113,512 05			1,122 74	663	499 46	114,634 79
Hants	Windsor	5,450	1,627 60	1,627 60				5,450	1,627 60	1,627 60
Victoria	Aspy Bay	3,820	1,569 95	1,569 95				3,820	1,569 95	1,569 95
Dredge 'C. B.' losses			762 98	762 98					762 98	762 98
Totals		2,844,606	880,273 73	880,273 73	94,675	34,171 45	34,171 45	2,939,281	914,445 18	914,445 18

EXPENDITURE for dredging in Prince Edward Island for the thirty two years ended June 30, 1904.

King's	Grand River	76,170	15,304 04					76,170	15,304 04	
	Montague River	171,675	33,263 49					171,675	33,263 49	
	Murray Harbour South	101,253	18,147 03					101,253	18,147 03	
	Sturgeon	16,026	6,066 27					16,026	6,066 27	
	St. Mary's wharf	21,963	4,752 55					21,963	4,752 55	
	Georgetown Railway Wharf	1,002	408 32					1,002	408 32	
	Cardigan Bridge	35,595	8,619 36					35,595	8,619 36	
	Newport	3,240	917 82					3,240	917 82	
	Souris	3,825	1,083 53					3,825	1,083 53	

	Murray River	41,062	11,433 61					41,062	11,433 61	
	" Railway	5,926	1,860 30					5,926	1,860 30	
	Morrell			101,856 32	28,755	8,565 00	8,565 00	28,755	8,565 00	110,721 32
Queen's	Charlottetown Railway Wharf	86,151	22,162 30					86,151	22,162 30	
	" Pownal	14,193	2,963 50					14,193	2,963 50	
	" Ferry	10,075	2,006 99					10,075	2,006 99	
	" Steam Nav. Co.	13,113	5,491 77					13,113	5,491 77	
	" Connolly Wharf	9,978	4,409 68					9,978	4,409 68	
	" Peake Bros	12,195	5,362 46					12,195	5,362 46	
	" Queen St. Slip	3,915	1,109 03					3,915	1,109 95	
	" Geo Peake Whf	5,805	1,644 42					5,805	1,644 42	
	" Poole	12,240	1,609 95					12,240	1,609 95	
	" McMillan	6,165	1,320 13					6,165	1,320 13	
	" Domin'n Building Sewer	5,355	1,146 68					5,355	1,146 68	
	" Public Sewerage	2,880	679 12					2,880	679 12	
	Webster's Corner, East River	203	43 47					203	43 47	
	Crapaud, Victoria	118,040	34,574 90					118,040	34,574 90	
	Pownal Bay	33,610	6,536 20					33,610	6,536 20	
	Rocky Point	82,920	13,426 13					82,920	13,426 13	
	Vernon River	17,860	6,326 72		7,380	1.965 83		25,240	8,292 55	
	Wood Islands	2,780	548 00					2,780	548 00	
	Nine Mile Creek	31,650	6,286 46					31,650	6,286 46	
	Hickey Wharf	750	150 51					750	150 51	
	Carrs Point	12,165	2,441 28					12,165	2,441 28	
	Pinette	3,825	756 24					3,825	756 24	
	Fort Augustus	3,195	631 68					3,195	631 68	
	Southport Ferry	45,300	7,508 75					45,300	7,508 75	
	Red Point	7,161	3,879 60					7,161	3,879 60	
	North Rustico	13,536	4,775 38					13,536	4,775 38	
	South Rustico	11,649	4,109 67					11,649	4,109 67	
	Gauthier's Creek	17,847	8,305 50					17,847	8,305 50	
	Malpeque	28,575	3,483 32					28,575	3,488 32	
	French River	41,671	13,311 46					41,671	13,311 46	
	Bay View	4,095	1,912 87					4,095	1,912 87	
	Wedlocks	1,260	520 48					1,260	520 48	
	Belfast, Hallidays Wharf	2,070	1,524 24	170,958 89	13,365	2,944 54	4,910 37	15,435	4,468 78	175,869 26
Prince	Summerside	91,571	28,082 51					91,571	28,082 51	
	Hurds Point Pier	65,505	14,315 47					65,505	14,315 47	
	Tignish	11,387	13,005 45					11,387	13,005 45	
	Cascumpec	1,157	538 42					1,157	538 42	
	Cape Traverse	16,740	5,105 89					16,740	5,105 89	
	Holmans Wharf	9,585	1,269 21	62,266 95				9,585	1,269 21	62,266 95
	Total	1,336,271	335,082 16	335,082 16	49,500	13,775 37	13,775 37	1,385,771	348,857 53	348,857 53

EXPENDITURE for dredging in Quebec for the thirty two years ended June 30, 1904.

From appropriations Maritime Provinces.

County.	Locality.	TOTAL FOR THE THIRTY-ONE YEARS ENDED JUNE 30, 1903.			FOR THE YEAR 1903-04.			Total quantity. Cubic yards.	Total cost.	Cost for each County.
		Quantity. Cubic yards.	Cost.	Cost for County.	Quantity. Cubic yards.	Cost.	Cost for County.			
			$ cts.	$ cts.		$ cts.	$ cts.		$ cts.	$ cts.
Magdalen Islands, Co. Gaspé	House Harbour	6,800	2,392 92					6,800	2,392 92	
Magdalen Islands, Co. Gaspé	Amherst Harbour	495	242 05	2,634 97				495	242 05	2,634 97
Témiscouata	Riviere du Loup	2,587	825 47	825 47				2,587	825 47	825 47
Rimouski	Rimouski	8,123	3,997 59	3,997 59				8,123	3,997 59	3,997 59
	Total	18,005	7,458 03	7,458 03	Nil.	Nil.	Nil.	18,005	7,458 03	7,458 03

EXPENDITURE for dredging in New Brunswick for the thirty-two years ended June 30, 1904.

Gloucester	Bathurst	98,637	29,095 79					98,637	29,095 79	
	Caraquet			29,095 79	16,485	6,312 23	6,312 23	16,485	6,312 23	35,408 02
Kent	Richibucto	140,228	44,001 19		32,550	9,542 82		172,778	53,544 01	
	Cocagne	27,180	9,601 45					27,180	9,601 45	
	Buctouche	13,005	4,934 24					13,005	4,934 24	
	" Priests Point	3,510	1,110 70					3,510	1,110 70	
	" Chapel Point	4,140	1,310 07					4,140	1,310 07	
	" Robertsons wharf	45	14 23	60,971 88			9,542 82	45	14 23	70,514 70
King's	Belleisle Point	77,905	13,052 23					79,905	13,052 23	
	Kennebecasis River	116,270	20,081 83					116,270	20,081 83	
	Moss Glen	10,200	1,924 47	35,058 53				10,200	1,924 47	35,058 53
Northumberland	Horse Shoe, Miramichi	208,892	55,058 36					208,892	55,058 36	
	Outer Bar "	29,935	7,965 31					29,935	7,965 31	
	Grand Dune "	37,975	10,121 67					37,975	10,121 67	
	Gordon Flats "	22,425	4,403 95					22,425	4,403 95	
	Neguac "			77,549 29	6,300	6,969 76	6,969 76	6,300	6,969 76	84,519 05

Queen's	Grand Lake	153,692	23,328 32		48,625	4,757 78		202,317	28,086 10	
	McNair's Cove	20,440	4,522 82					20,440	4,522 82	
	Jemseg	87,230	17,190 06					87,230	17,190 06	
	Washademoak	65,675	8,073 65					65,675	8,073 65	
	Grimross, mid ground	12,040	3,274 99					12,040	3,274 99	
	Gagetown Creek Canal	33,590	5,968 99		12,345	1,770 98		45,935	7,739 97	
	Spoon Island	3,000	402 51					3,000	402 51	
	Wards Shoal, Salmon River	46,625	4,593 59					46,625	4,593 59	
	Curley Shoal	36,625	3,369 16					36,625	3,369 16	
	Chipman and Briggs Corner	104,275	12,269 49					104,275	12,269 49	
	Upper Gagetown wharf	1,700	1,104 90					1,700	1,104 90	
	McClure Shoal	39,525	4,556 66					39,525	4,556 66	
	Queen's Coal Co., Newcastle			88,655 14	14,475	1,335 06	7,863 82	14,475	1,335 06	96,518 96
Restigouche	Dalhousie	22,301	6,543 08					22,301	6,543 08	
	Traverse	110,810	21,415 93	27,959 01				110,810	21,415 93	27,959 01
St. John	I. C. Ry. terminus	200,842	49,683 52		9,650	2,201 88		210,492	51,855 40	
	Navy Island	25,294	9,296 79					25,294	9,296 79	
	Marble Cove	29,925	4,374 40					29,925	4,374 40	
	Murray's Mills	27,555	3,681 41					27,555	3,681 41	
	Indiantown wharf	1,615	192 83					1,615	192 83	
	Long wharf	7,137	2,680 24					7,137	2,680 24	
	Miller and Woodman	9,275	1,090 42					9,275	1,090 42	
	Hayford and Stetson	8,015	942 29					8,015	942 29	
	International wharf	450	52 90					450	52 90	
	Adams wharf	7,513	3,247 29					7,513	3,247 29	
	Anchor Line wharf	4,695	996 81					4,695	996 81	
	Dominion Atlantic wharf	15,525	4,484 72					15,525	4,484 72	
	St. John, Winter Berths	320,548	40,956 91		54,080	12,290 56		320,548	53,247 47	
	" Harbour Channel	3,413	5,063 92					3,413	5,063 92	
	Purves and Murchie Mill	675	142 57					675	142 57	
	McAvity's wharf	4,110	606 88					4,110	606 88	
	Lawtons wharf	570	101 46					570	101 46	
	Thorne wharf	1,980	249 02					1,980	249 02	
	Maritime Mail Co. wharf	1,425	224 52					1,425	224 52	
	Cushing Mill	20,850	1,222 86					20,820	1,222 86	
	Hilyard's Mill	1,400	314 10					1,400	314 10	
	Kennebecasis River	2,025	604 37	130,210 23			14,492 44	2,025	604 37	144,702 67
Sunbury	Oromocto	351,087	61,842 91		44,360	4,574 67		395,447	66,427 58	
	McLean wharf	625	181 59					625	181 59	
	Ox Island	51,800	5,266 50					51,800	5,266 50	
	French Lake	25,475	3,787 49					25,475	3,787 49	
	Bents wharf, Maugerville	2,310	428 44					2,310	428 44	
	Upper Sheffield	3,830	425 15	71,942 08			4,574 67	3,830	425 15	76,516 75
Westmorland	Point du Chene	133,035	34,582 71		8,295	1,704 76		141,330	36,287 47	
	Cape Tormentine	35,120	9,004 92	43,587 63			1,704 76	35,120	9,004 92	45,292 39
York	Fredericton	126,365	21,679 06					126,365	21,679 06	
	St. Marys Ferry	15,570	6,827 36					15,570	6,827 36	
	Gibson	30,395	4,379 52					30,395	4,379 52	

EXPENDITURE for dredging in New Brunswick for the thirty-two years ended June 30, 1904.

County.	Locality.	For the thirty-one years ended June 30, 1903.			For the year 1903-1904.			Total Quantity Cubic yards.	Total Cost.	Cost for each County.
		Quantity Cubic yards.	Cost.	Cost for County.	Quantity Cubic yards.	Cost.	Cost for County.			
			$ cts.	$ cts.		$ cts.	$ cts.			
York—*Con*.....	Naashwaak.....	1,600	435 22	.....	.....	.....	.....	1,600	435 22	.....
	Fisher and Chestnut Shoals..	8,200	1,547 12	.....	.....	.....	.....	8,200	1,547 12	.....
	Canada Eastern Ry. wharf..	3,970	1,013 98	.....	.....	.....	.....	3,970	1,013 98	.....
	Springhill, Chapel and Russel Bars.....	90,735	22,801 16	.....	5,560	1,585 62	.....	96,295	24,386 78	.....
	Robinsons Bar.....	6,965	1,717 16	.....	.....	.....	.....	6,965	1,717 16	.....
	Douglas Booms.....	14,235	1,512 87	61,913 45	.....	.....	1,585 62	14,235	1,512 87	63,499 07
	New Brunswick, equipment..	.....	1,591 12	1,591 12	.....	.....	.....	.....	1,591 12	1,591 12
	Total.....	3,124,019	628,534 15	628,534 15	252,725	53,046 12	53,046 12	3,376,744	681,580 27	681,580 27

STATEMENT of Dredging, Showing Quantities Removed in each Province and Cost of each Work for the Thirty-two Years Ended June 30, 1904.

Fiscal Year.	New Brunswick.		Nova Scotia.		Quebec.		Prince Edward Island.		Total Quantity. Cubic Yards	Total Expenditure	Cost per Cubic Yard.
	Quantity.	Cost.	Quantity.	Cost.	Quantity.	Cost.	Quantity.	Cost.			
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
1872-3	38,060	13,240 50	23,260	8,422 70					61,320	21,663 20	0. 35 32
1873-4	57,725	14,395 57	18,600	6,545 61	6,800	2,392 92			83,125	23,334 10	0. 28 71
1874-5	78,223	17,325 05	24,416	13,238 83			18,655	9,892 89	121,294	40,456 77	0. 33 354
1875-6	79,935	17,040 52	91,974	21,885 90			58,283	10,891 80	230,192	49,818 22	0. 21 642
1876-7	97,690	23,161 90	127,785	34,846 74			74,460	12,758 27	299,935	70,766 91	0. 23 594
1877-8	81,070	23,323 92	106,857	29,607 94			82,860	12,011 18	270,787	64,943 04	0. 23 983
1878-9	132,555	27,400 22	116,307	28,267 59			46,490	9,164 07	295,352	64,831 88	0. 21 951
1879-80	63,540	16,581 79	127,684	34,765 84	765	374 08	36,390	12,674 98	220,379	64,396 69	0. 28 197
1880-1	44,315	12,385 85	87,118	23,061 64	2,317	693 44	46,335	9,298 53	180,085	45,439 46	0. 25 232
1881-2	79,640	18,626 87	89,566	33,363 71			47,325	9,356 57	216,531	61,347 15	0. 28 331
1882-3	48,565	13,422 70	143,616	42,996 93			68,535	11,080 37	260,716	67,500 00	0. 25 890
1883-4	47,058	17,103 38	157,560	49,050 58			79,750	13,355 05	284,268	79,509 01	0. 27 959
1884-5	128,997	24,460 35	76,164	25,250 73	8,123	3,997 59	55,075	8,668 01	268,359	62,376 68	0. 23 242
1885-6	68,505	14,874 63	56,790	21,482 05			17,137	10,349 66	142,432	46,706 34	0. 32 793
1886-7	69,440	11,452 86	53,400	25,621 19			6,137	6,214 74	128,977	43,288 79	0. 33 56
1887-8	50,152	9,252 50	84,175	29,847 60			3,775	5,899 90	138,102	45,000 00	0. 32 58
1888-9	63,633	16,598 08	56,910	32,697 00			24,240	15,502 95	144,783	64,798 03	0. 27 29
1889-90	86,068	20,544 93	59,783	22,821 55			31,422	11,085 39	177,273	54,451 87	0. 30 71
1890-1	96,588	20,375 06	61,698	24,386 57			19,004	8,843 92	177,290	53,605 55	0. 30 23
1891-2	75,023	20,592 85	81,993	27,376 08			31,382	12,788 34	188,398	60,757 27	0. 32 249
1892-3	108,035	23,742 26	40,834	18,125 58			66,585	15,112 83	215,454	56,980 67	0. 26 44
1893-4	77,505	21,564 27	59,581	28,664 99			61,536	12,269 24	198,622	62,498 50	0. 31 46
1894-5	59,715	13,630 11	105,463	32,202 70			48,060	10,428 90	213,238	56,261 71	0. 26 38
1895-6	98,905	21,352 63	36,428	15,828 89			36,360	10,299 93	171,693	47,481 45	0. 27 65
1896-7	203,975	34,050 86	84,735	22,080 46			51,078	10,937 62	339,788	67,068 94	0. 19 73
1897-8	187,325	27,611 17	147,085	31,497 57			46,710	10,701 49	381,120	69,810 23	0. 18 31
1898-9	105,058	23,315 82	155,510	36,628 81			51,040	13,283 71	311,608	73,228 34	0. 23 50
1899-1900	176,935	28,232 46	152,033	37,589 22			94,364	17,537 73	422,332	83,359 41	0. 19 76
1900-1	205,369	32,615 29	94,557	36,141 17			26,020	18,984 13	325,946	87,740 59	0. 26 91
1901-2	218,210	28,508 97	143,142	39,247 35			51,320	16,196 95	405,682	83,953 27	0. 20 69
1902-3	197,207	36,195 40	134,648	32,856 93			55,943	16,160 33	387,798	85,212 66	0. 21 97
1903-4	252,725	53,046 12	94,675	34,171 45			49,500	13,775 37	396,900	100,992 94	0. 25 44
Totals	3,375,746	696,024 89	2,894,347	900,571 90	18,005	7,458 03	1,385,771	355,524 85	7,667,879	1,959,579 67	0. 25 55

STATEMENT of Dredging showing Quantities removed by hand in each Province and cost of each Dredging for the Thirty-two Years, ended June 30, 1904.

Fiscal Year.	New Brunswick.		Nova Scotia.		Quebec.		Prince Edward Iseand.		Total Quantity. Cubic Yards.	Total Expenditure	Cost per Cubic Yard.
	Quantity.	Cost.	Quantity.	Cost.	Quantity.	Cost.	Quantity.	Cost.			
		$ cts.		$ cts.		$ cts.		$ cts.		$ cts.	$ cts.
1878-9			245	555 13					245	555 13	2. 26 58
1879-80			12,370	3,666 90					12,370	3,666 90	0. 29 64
1880-1			11,140	2,560 25					11,140	2,560 25	0. 22 98
1881-2			10,640	2,650 00					10,640	2,650 00	0. 24 90
1882-3			8,190	2,500 00					8,190	2,500 00	0. 30 52
1883-4			5,460	2,500 00					5,460	2,500 00	0. 45 78
1899-1900			343	248 71					343	248 71	0. 72 51
1900-1			320	250 75					320	250 75	0. 78 35
1902-3			1,645	496 38					1,645	496 38	0. 30 17
Totals			50,358	15,428 12					50,353	15,428 12	0. 30 64

STATEMENT of dredging in the Maritime Provinces showing quantities removed by and expenditure of each dredge during the thirty-two years ended June 30, 1904.

Dredge.	TOTAL QUANTITIES AND COST FOR THIRTY-ONE YEARS ENDING JUNE 30, 1903.			1903-1904.			TOTAL FOR THIRTY-TWO YEARS ENDED JUNE 30, 1904.		
	Total Quantity.	Cost.	Per cubic yard.	Quantity.	Cost.	Per cubic yard.	Total Quantity.	Total cost.	Cost per cubic yard.
		$ cts	$ cts.		$ cts.	$ cts.		$ cts.	$ cts.
St. Lawrence	1,496,131	390,112 12	0 26 07	51,100	12,767 23	0 24 98	1,547,231	402,879 35	0 26 03
Canada	968,824	304,570 99	0 31 43	33,210	14,797 67	0 44 55	1,002,034	319,368 66	0 31 87
New Dominion	1,559,417	269,812 18	0 17 30	111,175	15,321 04	0 13 78	1,670,592	285,133 22	0 17 06
Prince Edward	1,299,911	334,290 10	0 25 71	49,500	13,775 37	0 27 82	1,349,411	348,065 47	0 25 79
(Old) Cape Breton	534,948	139,074 33	0 25 99	.....	.....	.....	534,938	139,074 33	0 25 99
Geo. McKenzie	688,425	284,930 15	0 41 38	19,150	12,453 20	0 65 82	707,575	297,383 35	0 42 02
Cape Breton	549,785	88,928 90	0 16 17	54,845	18,682 92	0 34 06	604,630	107,611 82	0 17 79
New Brunswick	161,640	40,370 37	0 24 97	77,920	13,195 51	0 16 93	239,560	53,565 88	0 22 36
	7,269,071	1,852,089 14	0 25 51	396,900	100,992 95	0 25 19	7,655,971	1,953,082 08	0 25 51

STATEMENT of dredging performed by hand in the Maritime Provinces showing quantities removed and expenditure at each locality for the thirty-two years ended June 30, 1904.

Locality.	TOTAL QUANTITIES AND COST FOR THIRTY-ONE YEARS ENDING JUNE 30, 1903.			1903–1904.			Total Quantity.	Total cost.	Cost per cubic yard.
	Total Quantity.	Cost.	Per cubic yard.	Quantity.	Cost.	Per cubic yard.			
		$ cts.	$ cts.		$ cts.	$ cts.		$ cts.	$ cts.
Parrsboro, N.S.	42,595	12,804 68	0 30 06				42,595	12,804 68	0 30 06
Windsor, N.S.	5,450	1,627 60	0 29 86				5,450	1,627 60	0 29 86
Milton, N.S	663	499 46	0 75 33				663	499 46	0 75 33
Racquette, N.S.	1,645	496 38	0 30 17				1,645	496 38	0 30 17
	50,353	15,428 12	0 30 64				50,353	15,428 12	0 30 64

PROVINCE OF QUEBEC.

DREDGING AT BATISCAN RIVER.

Batiscan river is on the north shore of the St. Lawrence, below Three Rivers.

The dredging was continued, during the summer months of 1903, in the eastern channel for a distance of 3,600 feet.

The dredge 'St. Pierre' owned by Mr. Antoine St. Pierre, Three Rivers, resumed dredging, above the Canadian Pacific Railway bridge on June 1, 1903, and discontinued working on October 21.

The dredging was done to four feet at low water, 60,605 cubic yards of clay and sand material were removed.

Expenditure during the fiscal year 1903-04, $5,861.50.

DREDGING AT BEAUHARNOIS.

From July 1 to October 26, 1903, the dredge 'Nithsdale' worked at this place, making two cuts through the shoal, on the west side of the Nun's island, 2,000 feet long, 20 feet wide to a depth of 8 feet at low water ; 22,207 cubic yards of clay and sand were removed.

DREDGING AT CALUMET.

Between October 15 and November 18, 1903, the close of navigation, the dredge 'Little Giant' worked at this place, making a channel from the Ottawa river to Higginson's mill, for the purpose of allowing the logs to be taken in. One cut was made, 1,373 feet long with an average width of 20 feet and 9 feet deep at low water. As the water had lowered to such an extent that the scows could not be utilized, this work was discontinued—6,850 cubic yards of clay and sand were removed.

Work was resumed at this place by the dredge 'T. F. M. No. 1,' on May 23, and continued there up to June 30, 1904, the close of the fiscal year, making one cut along the Canadian Pacific Railway wharf up to the mill, 1,321 feet long, 22 feet wide, and to a depth of 6 feet at low water.—15,400 cubic yards of clay and sand were removed.

One hundred and forty feet of this cut was cast over.

DREDGING IN THE CHAMBLY CANAL.

The dredge 'Richelieu' commenced work at this place on May 21, 1904, in the Little lake at the entrance to the canal, making one cut 45 feet long, 25 feet wide and to a depth of 8½ feet at low water ; 240 cubic yards of clay were removed.

DREDGING AT CHATEAUGUAY BASIN.

From May 28 to June 30, 1904, the close of the fiscal year, the dredge 'Central City' worked at this place. Three cuts were made in front of Durocher's wharf, 250, 150 and 105 feet long, 20 feet wide and 15 feet deep at low water. 5,160 cubic yards of hard-pan and boulders were removed.

DREDGING AT COTEAU LANDING.

The dredge 'No. 4 Daly' worked at this place between August 1 and September 1, 1903, deepening alongside the steel elevator. The depth of water made was 15 feet at low water and the material removed was 7,900 cubic yards of clay.

DREDGING AT DOUCET'S LANDING.

Doucet's Landing is on the south shore of the St. Lawrence, opposite Three Rivers.

The basin contemplated is situated on the eastern side of the wharf which is the terminus of the Arthabasca Railway, belonging to the Grand Trunk Railway Company.

The size of the basin would require to be 400 feet in width by 800 feet in length, so as to allow the steamboats plying at Doucet's Landing to go in, during stormy weather.

During the fiscal year 1903-04, 75,950 cubic yards of clay, sand and a great many boulders have been removed by dredge 'No. 4 Macdonald.'

Total expenditure during the fiscal year, $11,875.15.

DREDGING AT GRAHAM.

Between July 1 and November 19, 1903, the dredge 'T.F.M.No. 1' worked at this place, making a channel from deep water, in the Ottawa river, to Graham's wharf, a distance of 5,000 feet. Three cuts were made to a depth of 8 feet at low water, 4,775, 5,860 and 2,250 feet long respectively. The material removed at this place consisted of 57,200 cubic yards of sand and clay.

Dredge 'No. 4 Cohen' also worked at this place, from May 11 to 13, 1904, making a channel in front of Graham's wharf out to deep water. One cut was made 140 feet long, 25 feet wide and to a depth of 8 feet at low water. 910 cubic yards of clay were removed.

DREDGING AT GRENVILLE.

Work was performed at this place, by the dredge 'Richelieu,' between July 1 and August 25, 1903, making an approach to the new wharf, in front of Dansereau's sawmill. Two cuts were dredged about 500 feet long, 25 feet wide and to a depth of 8 feet at low water. The material removed consisted of 7,425 cubic yards of clay and sand.

DREDGING AT L'ASSOMPTION.

The dredge 'No. 4 Daly' worked at this place, between May 28 and June 30, 1904, the close of the fiscal year. The work consisted of four cuts at the entrance to L'Assomption river, between Bourbon island and Deschamps point, each 842 feet long, 25 feet wide and to a depth of 12 feet at low water.—16,169 cubic yards of clay and stones were removed.

DREDGING AT MONTEBELLO.

Between November 19 and 21, 1903, the close of navigation, the dredge 'Nithsdale' worked at this place, deepening in front of Owen's wharf. The material removed consisted of 297 cubic yards of hard clay and stone.

DREDGING NICOLET RIVER.

The Nicolet empties into the St. Lawrence on its southern shore, at the foot of Lake St. Peter.

The dredge 'Pontiac' owned by the W. J. Poupore Co., of Montreal, commenced dredging at the upper section of the river, on May 15, 1903, and discontinued working on August 29, 1903, the work was resumed on May 16, 1904, and was discontinued on June 22, 1904.

Forty-two thousand three hundred and fifty cubic yards of sand, clay and stone materials were removed during the fiscal year 1903-04.

Expenditure during the fiscal year : $6,079.26.

DREDGING AT NOTRE DAME DE PIERREVILLE.

The dredge 'St. Louis' commenced work at this place on July 1, and continued there up to November 17, 1903, the close of navigation. The work consisted of deepening the channel, between the mouth of the river and the outlet of Hertel channel, making one cut 25 feet wide to a depth of 8 feet at low water ; 19,740 cubic yards of sand were removed.

Operations were resumed by the same dredge at this place, on May 2, and continued there up to June 14, 1904. Making one cut in the channel, near the first island, 589 feet long and two other cuts in the Tardiff channel, one 648 feet long and one 377 feet long, all to a width of 25 feet and a depth of 8 feet at low water; 5,895 cubic yards of sand and slabs were removed.

DREDGING AT RIGAUD.

Work was performed at this place, by the dredge 'No. 4 Cohen,' between October 28 and November 18, 1903, the close of navigation, deepening the channel from the Ottawa river into the River LaGraisse, through a sand shoal. One cut was made 22 feet wide to a depth of 10 feet at low water. The material removed was 7,722 cubic yards of sand and clay.

Work was resumed at this place by the dredge 'No. 4 Cohen' on May 14, and continued there up to June 30, 1904, the close of the fiscal year. One cut was made in the Rigaud river, near the Canadian Pacific Railway bridge, 1,459 feet long, 22 feet wide, and 8 feet deep at low water. Another cut was made 61 feet long, 22 feet wide and 8 feet deep at low water. Further work at this upper end of the channel could not be continued on account of high water. Three cuts were made between Seguin's point and McDonald's point, at the lower end of the river, two 782 feet long and one 100 feet long, all to a width of 22 feet and to a depth of 8 feet at low water mark; 19,434 cubic yards of clay and sand were removed.

DREDGING IN THE RIVER JESUS.

From July 1 to October 31, 1903, the dredge 'Otto' worked at this place, deepening the channel from below McDonald's wharf towards the Canadian Pacific Railway bridge at Terrebonne. An approach was also made to the wharf at Lachenaie. The whole of this work was done to a depth of 8 feet at low water. The material removed was 24,890 cubic yards of clay, gravel and small stones.

The dredge 'Otto' also worked at this place, between June 23 and 30, 1904, the close of the fiscal year, making one cut 83 feet long, 21 feet wide and 6 feet deep at low water ; 990 cubic yards of gravel and clay were removed.

DREDGING AT ROBERVAL.

The dredge 'X. V. Savard' worked at the entrance of the harbour of Roberval and on the south side of the wharf between July 1 and October 30, 1903.

The quantity of material removed during the summer was 11,875 cubic yards, which consist of clay and sawdust.

Expenditure, $3,500.

DREDGING AT ST. ANDREWS.

Between August 26 and September 25, 1903, the dredge 'Richelieu' worked at this place, deepening the channel leading to the town wharf; 695 cubic yards of boulders were removed.

Dredging was also performed by the dredge 'Nithsdale' at this place, between October 29 and November 16, 1903, the close of navigation, continuing the work left undone by the dredge 'Richelieu'; 805 cubic yards of boulders were removed.

DREDGING AT ST. ANTOINE.

From June 20 to 30, 1904, the close of the fiscal year, the dredge 'St. Louis' worked at this place, making two cuts in the channel, one 783 feet long and one 909 feet long, both to a width of 25 feet and to a depth of 7 feet at low water; 2,580 cubic yards of sand were removed.

DREDGING AT ST. JEAN DES CHAILLONS.

Between May 16 and June 30, 1904, the close of the fiscal year, the dredge 'Nithsdale' was working at this place, making two cuts between flats, one 300 feet long and one 250 long. Two other cuts were made alongside the docks one 300 feet and one 1,110 feet long. These four cuts were made to a width of 25 feet and to a depth of 7 feet at low water. 10,535 cubic yards of hard-pan, boulders, gravel and clay were removed.

DREDGING AT ST. JOHNS.

Work was commenced at this place by the dredge 'Richelieu,' on September 30, and continued there up to November 21, 1903, the close of navigation. The work done consisted of three cuts, 500 feet long, 22 feet wide and 9 feet deep at low water, in the channel from St. Johns harbour to Iberville wharf, and two cuts about 175 feet long, 22 feet wide and 9 feet deep in the main channel, south of the railway bridge, also removing a boulder shoal close to the draw-bridge. The total quantity of material removed was 9,630 cubic yards of clay, sand and boulders.

DREDGING ST. MAURICE RIVER.

The River St. Maurice flows southward and empties into the St. Lawrence at Three Rivers.

Grandes Piles to la Tuque.—For a distance of 66 miles there is a good channel for vessels drawing less than two feet six inches of water.

The dredging was performed by dredge 'St. Maurice' at Mekinac shoal, on the 14th mile above Grandes Piles. The work was commenced on June 22, 1903, and discontinued on October 15, 1903, during which time 13,702 cubic yards of sand, clay and boulders were removed, making a channel of 40 feet wide for a distance of 2,983 feet.

The stone-lifter with a rock seeker have been working at Grande Anse, on the 37th mile above Grandes Piles, and at Batiscan crossing, on the 44th mile above Grandes Piles.

The stone-lifter was working from June 22 to October 10, 1903, during which time 318 boulders were removed and 33,940 feet of the channel examined.

Expenditure during the fiscal year 1903-04 was $7,768.16.

Eastern Channel.—Some dredging was also done at the outlet of the eastern channel by the dredge 'Duke of York.' The work was commenced on May 22, and discontinued on October 24, 1903. 99,887 cubic yards of sand, clay and boulders were removed.

Expenditure during the fiscal year, $12,954.

DREDGING AT STE. BLAISE.

Between May 28 and June 11, 1904, the dredge 'Richelieu' worked at this place, in the channel opposite the village, making two cuts, one 190 feet long, 25 feet wide and one 505 feet long, 15 feet wide, both cuts were dredged to 7 feet at low water. 4,088 cubic yards of clay and sand were removed.

DREDGING AT VALLEYFIELD.

The dredge 'No. 4 Daly' worked at this place between September 2 and October 28, 1903, making a channel through the bar, about 75 feet wide, 600 feet long to a depth of 13 feet at low water. The material removed consisted of 8,400 cubic yards of sand and stones.

DREDGING AT VILLE MARIE.

The dredge 'Queen' commenced work at this place, on September 23 and continued there up to November 7, 1903, the close of navigation. One cut was made 750 feet long, 25 feet wide, to a depth of 9 feet at low water. Another cut was also made along the front and sides of the piers, 380 feet long, 25 feet wide and 9 feet deep. 9,870 cubic yards of clay were removed.

DREDGING YAMASKA RIVER.

This river takes its rise in the township of Bolton, in the county of Brome. It forms an outlet for several large lakes, and has a course of about 90 miles. It flows through the counties of Brome, Missisiquoi, Rouville, Bagot and St. Hyacinthe, Richelieu and Yamaska, and empties into the head of Lake St. Peter on the southern side, 8 miles below Sorel.

Some dredging was performed by dredge 'No. 4 Macdonald,' from Yamaska lock to the outlet, a distance of about four miles.

Twenty-seven thousand and forty-five yards of clay and sand were removed during the fiscal year 1903-04.

Expenditure during the fiscal year was $6,370.82.

PROVINCE OF ONTARIO.

DREDGING AT BURLINGTON PIERS.

The dredge 'Nipissing' worked at this place from September 15 to November 13, 1903, removing the boulders and other loose material, which had fallen from the piers and obstructing navigation ; 9,340 cubic yards of boulders, stone and sand were removed.

DREDGING AT COLLINGWOOD.

The dredge 'Challenge' worked at this place at Charlton's mill, between July 1 and August 25, 1903, deepening the approach and alongside the wharfs to an average depth of 13 feet at low water. This dredge also worked at the dry dock August 26 and 27, 1903, cleaning off the apron and gate rest. The total amount of material removed was 10,770 cubic yards of hardpan, clay, stone, gravel and boulders.

As the hull of this dredge, as well as the scows, were found to be no longer serviceable in this exposed locality, they were laid up at the docks for the winter and towed to Ottawa in the spring of 1904.

Between June 15 and 30, 1904, work was also performed at this place by the dredge 'No. 7, Coghill.' One cut was made along the southeast side of the mill pond, 536 feet long, 24 feet wide and to a depth of from 8 to 10 feet at low water.

All the material removed was cast over on the new cribwork, and when completed this work will be of a permanent nature.

DREDGING AT FORT WILLIAM.

The entrance channel to the Kaministiquia river has been widened on each side parallel to the range lights. A channel was dredged along the face of the 'Empire Elevators Company's' new dock, in course of construction, and when completed will be 140 feet in width, and to a depth of 22 feet below zero of new gauge.

The channel of the River Kaministiquia, from the Mission river to the Canadian Northern Railway coal docks at West Fort William, was widened and deepened in places where shoals were found.

The total amount of material removed during the past fiscal year from the Kaministiquia river and entrance channel was 373,937 cubic yards, at a cost of $63,388.40.

Total expenditure for the year, $68,892.95.

DREDGING AT GANANOQUE.

Between July 1 and September 18, 1903, the dredge 'No. 4, Cohen' worked at this place, continuing the work of deepening the channel in the river and through the shoal opposite Squaw Point. This dredging was done to an average depth of 9 feet at low water. The material removed consisted of 29,950 cubic yards of saw-dust, clay and sand.

DREDGING AT HAMILTON.

From November 19 to 21, the close of navigation, the dredge 'Nipissing' worked at this place, in the slip for the Hamilton Steamboat Co., but owing to some misunderstanding between the parties interested, the work was ordered to be stopped. The quantity of material removed consisted of 337 cubic yards of mud and sand.

The dredge 'Nipissing' also worked at this place, from May 28 to June 30, 1904, the close of the fiscal year. Five cuts were made in front of Brown's dock and along warehouse. Two cuts were 390 feet long, two 195 feet long, and one 165 feet long. All cuts were made to a width of 27 feet and to a depth of 14 feet at low water. 17,925 cubic yards of clay and sand were removed.

DREDGING AT HAWKESBURY.

From July 1 to August 1, 1903, the dredge 'Little Giant' worked at this place, continuing the deepening of the channel, leading from the Ottawa river to the town wharfs to a depth of 8 feet. One cut was made from below Higginson's wharf to the centre of Cobb island, a distance of 840 feet. 6,270 cubic yards of hardpan and clay were removed.

The dredge 'Little Giant' also worked at this place between May 18 and June 30, 1904, the close of the fiscal year. One cut was made from Higginson's wharf to the end of Cobb island, 1,050 feet long, 28 feet wide and to a depth of 8 feet at low water. 11,495 cubic yards of hardpan, stone and boulders were taken out.

DREDGING AT KINGSTON.

The dredge 'Sir Richard' worked at this place between July 1 and September 14, 1903, on the approach to the Kingston and Pembroke Railway dock, widening and deepening the channel to allow coal and other vessels to reach the dock. A channel was completed about 60 feet wide and to a depth of 14 feet at low water.

The dredge was then taken to Richardson's elevator, and worked there up to October 28, deepening and widening the harbour of refuge, completing the work commenced the previous season. This work was done to a depth of 14 feet at low water.

The plant was then removed to the Rathbun's slip, at Grove-in, a suburb of Kingston, and worked there two days, making one cut in the slip, 160 feet long, 25 feet

wide, to a depth of 9 feet, removing loose boulders and silt. Owing to the low water at that season of the year and the material below 9 feet being solid rock, work was discontinued and the dredge removed to Portsmouth, another suburb of Kingston, and made one cut along the front of Crawford's dock, about 100 feet long to a depth of 9 feet, removing an obstruction consisting of boulders.

This dredge then resumed operations, on the approach to the Kingston and Pembroke Railway dock, and removed an elbow in the channel, to give the vessels a straighter course to the basin. The dredge continued to work there up to November 19, the close of navigation. The total quantity of material removed at Kingston, including Grove-in and Portsmouth, consisted of 46,116 cubic yards of hardpan, clay and boulders.

From June 8 to 30, 1904, the dredge 'Sir Richard' was working at this place making two cuts in front of Davis' dry dock, and running out into the channel, one 350 feet long and the other 450 feet long, 25 feet wide and 10 feet deep at low water. 10,200 cubic yards of hardpan and clay were removed.

DREDGING AT NEWCASTLE.

Dredging was done at this place by the dredge 'Nipissing,' between August 19 and September 10, 1903, dredging one cut from outside the harbour along the east pier, into the elevator wharf, a distance of 1,010 feet, 25 feet wide and 12 feet deep at low water. This work was done to enable grain and coal vessels to reach the elevator. 7,387 cubic yards of sand, stones and mud were removed.

DREDGING AT NEW LISKEARD.

Between July 1 and September 20, 1903, the dredge 'Queen' worked at this place, making an approach to the wharfs. A channel was made at the mouth of the Wabbie river, out to deep water, 25 feet wide and to a depth of 8 feet; removing 15,715 cubic yards of clay and sunken logs.

On June 10, 1904, the dredge 'Queen' resumed operations at this place, and continued up to the close of the fiscal year, continuing the work done last season in the new channel, making one cut 500 feet long, 26 feet wide and to a depth of 9 feet at low water. The material removed at this place consisted of 9,870 cubic yards of clay.

DREDGING IN THE OTTAWA RIVER.

The dredge 'Little Giant' worked at this place, from August 2 to October 15, 1903, deepening the channel leading to the Hawkesbury Lumber Co.'s docks. Two cuts were made, one 750 feet and one 350 feet long, 25 feet wide, to a depth of 8 feet at low water. The material removed consisted of 23,655 cubic yards of hardpan, stone and clay.

DREDGING AT PORT ARTHUR.

The contract awarded to Mr. C. S. Boone, for dredging at Port Arthur, is completed.

The slip between the Canadian Pacific and Canadian Northern Railway wharfs has been dredged to a depth of 20 feet below zero of the new gauge established February last, 1904.

The channel from the entrance of the breakwater to the new Canadian Northern Railway elevator, No. 2, is also completed.

Some dredging was done along the face of the wharf at King's elevator in the fall of 1903, but had to be discontinued on account of construction works by the Canadian Pacific Railway Company at their new storage tank elevator.

The total amount of material removed from the harbour during the fiscal year was 292,154 cubic yards, at a cost of $91,508.92.

Total expenditure for the year, $97,497.49.

DREDGING AT PORT BURWELL.

Between July 17 and September 18, 1903, the dredge 'Ontario' was working at this place, dredging berths for new cribwork, at the outer end of the east pier, to a depth of 21½ feet, also widening and deepening an approach in front of the new wharf, in the inner harbour, at the mouth of Otter creek, to 14 feet at low water. The material removed at this place was 15,070 cubic yards of clay, slabs and logs.

DREDGING AT PORT HOPE.

Work was performed at this place by the dredge 'Nipissing,' between July 1 and August 17, 1903, making two cuts outside the east pier, and three cuts inside of the west pier, approaching the entrance to the new harbour. One cut was also made alongside the dock opposite the sanitary works. All this dredging was done to a depth of 14 feet at low water. The material removed consisted of 21,412 cubic yards of hardpan, stones, sand and mud.

DREDGING AT RONDEAU.

The dredge 'Ontario' worked at this place between July 1 and 16, and September 21, to December 5, 1903, widening and deepening the channel through the bar outside the piers, removing a ridge on the east side of the channel, which leaves a channel through the bar, 175 feet wide out to 17 feet deep at low water. One cut was also made along the east side of the west pier, 325 feet long, 25 feet wide and 17 feet deep at low water. Five cuts were also made on the approach to the Car Ferry dock, to a depth of 17 feet, with a total width of 125 feet, having an average length of 200 feet. The total quantity of material removed at this place was 25,165 cubic yards of sand and clay.

This same dredge also worked at this place between May 28 and June 30, 1904, the close of the fiscal year. One cut was made through the bar, outside of piers, 800 feet long, 25 feet wide, and to a depth of 17 feet at low water. A part of a sunken crib was removed at south end of the piers, leaving 17 feet over it at low water. When not able to work outside or between the piers, owing to rough weather, this dredge worked in the turning basin, at the north end of the piers, in the bay, making 3 cuts, two, 200 feet long and one 175 feet long, all to a width of 25 feet and 17 feet deep at low water. The material removed at this place consisted of 7,065 cubic yards of boulders and sand.

DREDGING AT TRENTON.

The dredge 'Trenton' worked at this place from June 18 to 30, the close of the fiscal year. One cut was made through a mud and stone shoal, to give the channel a straighter course, 2,090 feet long, 30 feet wide and to a depth of 10 feet at low water. 13,680 cubic yards of stone and mud were removed.

SESSIONAL PAPER No. 19

STATEMENT of Expenditure and quantities of material removed by the various Dredges, at different localities, in Ontario and Quebec, during the fiscal year ended June 30, 1904.

Dredge.	Location.	Yards removed.	Character of soil.	Expenditure.	Cost per yard.
				$ cts.	cts.
Challenge	Collingwood	10,770	Hardpan, clay and boulders.	3,152 20	29¼
Ontario	Rondeau	32,230	Clay, sand and slabs.	7,101 26	15
"	Port Burwell	15,070			
Nipissing	Port Hope	21,412	Harpan, clay, stone, sand and mud	7,570 61	13²
"	Newcastle	7,387			
"	Burlington Piers	9,340			
"	Hamilton	18,262			
Sir Richard	Kingston	56,316	Harpan, boulders and mud	11,221 58	19⁹/₁₀
Queen	New Liskeard	15,785	Clay	8,796 21	34⁷/₂₅
"	Ville Marie	9,870			
Richelieu	Grenville	7,425	Harpan, boulders, clay and sand	6,792 63	30¾
"	St. Andrews	695			
"	St. Johns	9,630			
"	Chambly Canal	240			
"	Ste. Blaise	4,088			
St. Louis	Notre Dame de Pierreville	25,635	Sand and slabs	3,525 79	12½
"	St. Aimé	2,580			
Nightsdale	Beauharnois	22,207	Hardpan, boulders, gravel, clay, stone, sand and sawdust	12,854 57	38
"	St. Andrews	865			
"	Montebello	297			
"	St. Jean des Chaillons	10,535			
T.F.M. No. 1	Graham	57,200	Clay and sand	12,811 45	17¹³/₂₀
"	Calumet	15,400			
Little Giant	Hawkesbury	17,765	Hardpan, boulders and clay.	12,752 45	26½
"	Ottawa River	23,655			
"	Calumet	6,850			
No. 4 Cohen	Gananoque	29,950	Boulders, gravel, clay, sand, sawdust and slabs.	11,711 07	20⅕
"	Rigaud	27,156			
"	Graham	910			
Otto	River Jesus	25,880	Gravel and clay	6,312 00	24⅖
Central City	Chateauguay	5,160	Hardpan and boulders	1,935 00	37½

STATEMENT of Expenditure and quantities of material, &c.—*Concluded.*

Dredge.	Location.	Yards removed.	Character of Soil.	Expenditure.	Cost per yard.
				$ cts.	cts.
No. 4 Daly	Coteau Landing	7,900	Clay, stone and mud	8,183 00	25½
"	Valleyfield	8,400			
"	L'Assomption	16,169			
Trenton	Trenton	13,680	Mud and stone	1,860 00	13⅝
No. 7 Coghill	Collingwood		Casting over	1,446 50	

Classification and Quantities of Material removed by Dredges during the Year ended June 30, 1904.

DREDGE 'CHALLENGE'.

Description of Material Dredged.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Total.
	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.
Hard-pan	1,760												1,760
Boulders	2,700	100											2,800
Gravel		1,180											1,180
Clay		200											200
Clay and stone	1,480	1,110											2,590
Sand—ordinary		300											300
Sand—very fine		1,940											1,900
Totals	5,940	4,830											10,770

DREDGE 'ONTARIO.'

Boulders												360	360
Clay	4,120	7,365	3,185										14,670
Sand—ordinary	4,870		900	8,820	8,865	1,710					405		31,870
Mud slabs			400										400
Totals	8,990	7,365	4,485	8,820	8,865	1,710					405	360	47,300

DREDGE 'NIPISSING.'

Hard-pan	750	550											1,300
Clay					137½							3,250	3,387
Clay and stone			3,135	2,440	800								6,375
Sand—ordinary		4,112	2,440	2,085	800						750		10,227
Sand—very fine	13,687	6,425										13,925	34,037
Mud		875			200								1,070
Totals	11,437	11,962	5,535	4,525	2,017						750	17,175	56,401

Classification and Quantities of Material removed by Dredge during the Year ended June 30, 1904.

DREDGE 'SIR RICHARD'

Description of Materials Dredged.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.
Hard-pan	8,300	4,916	11,400	8,350	4,950							9,700	47,616
Boulders		300			100								400
Clay	2,800	2,300	500		1,500							500	7,600
Mud				700									700
Totals	11,100	7,516	11,900	9,050	6,550							10,200	56,316

DREDGE 'QUEEN.'

Clay	6,585	5,530	4,375	7,140	1,855							70	25,655

DREDGE 'RICHELIEU.'

Hard-pan			230	4,910	2,060								7,200
Boulders			455	280	1,780								2,525
Clay		805		600							714	1,694	3,813
Sand—ordinary	3,989	2,640									370	1,550	8,540
Totals	3,980	3,445	695	5,190	3,840						1,084	3,244	22,078

DREDGE 'ST. LOUIS.'

Sand—ordinary	4,290	5,130	4,140	3,720	2,460						3,160	3,915	26,815
Slates											1,400		1,400
Totals	4,290	5,130	4,140	3,720	2,460						4,560	3,915	28,215

DREDGE 'NITHSDALE.'

Hard-pan		1,260		355	412					420	1,435	3,882
Boulders				292	200						1,540	2,032
Gravel										3,220	1,000	4,220
Clay	2,920	820								1,400	1,520	6,690
Clay and stone				105								105
Sand—ordinary	2,755	3,310	6,772	3,780	197							16,815
Saw dust					100							100
Totals	5,705	5,390	6,772	4,232	910					5,040	5,495	33,844

DREDGE 'T. F. M. No. 1.'

Clay	7,550	10,950	8,500	12,200	3,450					4,975	6,250	53,875
Sand—ordinary	6,100	500	4,350		3,600						3,175	18,725
Totals	13,650	11,450	12,850	12,200	8,050					4,975	10,425	72,600

DREDGE 'LITTLE GIANT.'

Hard-pan	4,540	6,213	4,005	1,910						2,020	4,435	23,123
Boulders	3,915	4,142	3,500	1,700						1,400	3,640	18,297
Gravel												6,850
Clay				4,400	2,450							
Totals	8,455	10,355	7,505	8,010	2,450					3,420	8,075	4,8270

DREDGE 'No. 4, COHEN & SONS.'

Boulders			1,000									1,000
Gravel		1,150	2,712									3,852
Clay	9,052	6,570		1,190	3,562					5,853	2,427	31,655
Sand—ordinary			675	500	2,470					3,864	5,200	12,799
Saw-dust and slabs	1,000	6,100	1,600									8,700
Totals	10,052	13,820	6,077	1,690	6,032					9,717	10,627	58,016

DREDGE 'OTTO.'

Gravel	700		1,550	2,020							530	4,800
Clay	6,370	7,710	4,090	2,450							460	21.080
Totals	7,070	7,710	5,640	4,470							990	2,5880

Classification and Quantities of Material removed by Dredge during the Year ended June 30, 1904.

DREDGE 'CENTRAL CITY.'

Description of Materials Dredged.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Total.
	Yds.	Yds.	Yds.	Yds.	Yds.	Yds.	Yds,	Yds.	Yds.	Yds.	Yds.	Yds	Yds.
Hard-pan											200	4,260	4,960
Boulders												200	200
Totals											200	4,460	5,160

DREDGE 'No. 4 DALY.'

Clay												14,220	1,4220
Stone		1,540	4,410	4,040							1,430	519	11,939
Mud		6,260	50										6,310
Totals		7,800	4,460	4,040							1,430	14,739	32,469

DREDGE 'TRENTON.'

Mud and stone												13,680	13,680
Totals												13,680	13,680

DREDGE 'CHALLENGE.'

Wages	411 13	406 94	335 65	80 00	29 33	66 67	30 00	29 00		30 00	30 00	110 90	1,559 62
Coal	285 39	312 38	38 15	12 13						15 00		30 00	693 05
Provisions	130 74	128 81	98 20	95 10								5 31	458 16
Stores	55 34	18 50	11 11										84 95
Equipment		2 70											2 70
Repairs	4 27	32 47	10 20							19 05		125 42	192 41
Towage			5 50										5 50
Contingencies	15 84	4 34	5 00		12 15	4 45				10 70		103 33	155 81
Totals	902 71	907 14	503 81	187 23	41 48	71 12	30 00	29 00		74 75	30 00	374 96	3,152 20
Working expenses	898 44	873 67	493 61	187 23	41 48	71 12	30 00	29 00		55 70	30 00	249 54	2,959 79
Repairs, ordinary	4 27	33 47	10 20							19 05		125 42	192 41
Totals	902 71	907 14	503 81	187 23	41 48	71 12	30 00	29 00		74 75	30 00	374 96	3,152 20

DREDGE 'ONTARIO.'

Wages	390 16	399 84	402 04	386 83	390 83	279 32	374 28	155 00	34 84	367 23	433 67	523 12	4,137 16
Coal	106 67	285 84	142 25	138 33	252 24	91 51						84 37	1,101 22
Provisions	120 68	125 30	122 60	119 71	121 00	31 98					220 53		861 80
Stores		24 40		3 35	14 63	4 68						145 69	192 75
Equipment		41 18								10 75		55 68	107 61
Repairs			129 19	82 56				5 75	19 00	77 30	1 00	152 08	466 88
Contingencies			10 00	18 00		63 46		10 85				131 53	233 84
Totals	617 51	876 56	806 09	748 78	778 70	470 95	374 28	171 60	53 84	455 28	655 20	1,092 47	7,101 26
Working expenses	617 51	876 56	676 90	666 22	778 70	470 95	374 28	165 85	34 84	377 98	654 20	940 39	6,634 38
Repairs, ordinary			129 19	82 56				5 75	19 00	77 30	1 00	152 08	466 88
Totals	617 51	876 56	806 09	748 78	778 70	470 95	374 28	171 60	53 84	455 28	655 20	1,092 47	7,101 26

Classification of Disbursements of the Dredges during the Year ended 30th June, 1904.

DREDGE 'NIPISSING.'

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	385 00	378 15	397 60	411 67	385 00	99 33	274 78	428 25	527 76	314 58	305 81	531 90	4,439 83
Coal	234 52	118 75	349 69	....	219 55	129 38	....	....	26 00	30 75	147 60	81 00	1,337 24
Provisions	124 35	119 90	128 10	....	248 10	....	....	....	....	69 00	61 58	21 00	772 03
Stores	11 27	15 87	7 75	....	7 75	5 38	....	22 59	....	17 40	24 00	19 64	131 15
Equipment	....	79 33	7 77	105 70	....	....	....	....	....	....	....	....	192 80
Repairs	40 95	15 49	58 95	....	39 70	2 00	....	....	78 97	122 02	20 71	13 36	392 15
Contingencies	38 90	9 12	64 07	16 40	3 25	5 30	24 00	7 62	63 00	18 55	41 33	13 87	305 41
Totals	834 99	736 61	1,013 93	533 77	902 85	241 39	298 78	458 46	695 73	572 30	601 03	680 77	7,570 61
Working expenses	794 04	721 12	954 98	533 77	863 15	239 39	298 78	458 46	616 76	450 28	580 32	667 41	7,178 46
Repairs, ordinary	40 95	15 49	58 95	....	39 70	2 00	....	....	78 97	122 02	20 71	13 36	392 15
Totals	834 99	736 61	1,013 93	533 77	902 85	241 39	298 78	458 46	695 73	572 30	601 03	680 77	7,570 61

DREDGE 'SIR RICHARD.'

Wages	279 52	752 29	521 50	389 40	330 50	147 02	350 29	9 68	125 00	361 70	316 70	661 32	4,244 92
Coal	196 64	225 60	405 40	297 16	6 00	....	....	71 34	....	70 50	....	100 66	1,373 30
Provisions	153 97	152 81	124 60	214 79	....	....	....	....	....	....	91 26	....	739 43
Stores	142 57	33 73	29 20	....	4 78	....	....	19 48	....	26 28	21 22	63 69	340 95
Equipment	....	155 92	11 17	....	....	....	....	....	....	....	....	7 50	174 59
Repairs	434 17	653 52	517 46	84 97	8 65	....	....	15 00	29 00	275 42	128 49	193 30	2,339 98
Contingencies	1,438 46	295 63	40 00	5 93	14 80	....	18 20	21 81	....	....	136 70	38 89	2,010 42
Totals	2,645 33	2,269 50	1,649 33	992 25	364 73	147 02	368 49	137 31	154 00	733 90	694 37	1,065 36	11,221 59
Working expenses	2,211 16	1,615 98	1,131 87	907 28	356 08	147 02	368 49	122 31	125 00	458 48	565 88	872 06	8,881 61
Repairs, ordinary	434 17	653 52	517 46	84 97	8 65	....	....	15 00	29 40	275 42	128 49	193 30	2,339 98
Totals	2,645 33	2,269 50	1,649 33	992 25	364 73	147 02	368 49	137 31	154 00	733 90	694 37	1,065 36	11,221 59

DREEGE 'QUEEN.'

Wages	465 57	602 27	440 00	440 00	297 34					456 50	663 62	588 70	3,954 00
Coal		156 50	321 00									217 50	695 00
Provisions	134 22	138 87	37 40	135 00	84 90						140 71		671 10
Stores	31 20		8 65	68 10									107 95
Equipment	120 90		27 36								39 00		187 26
Repairs	61 23	88 97	32 40	241 37				19 95	121 42		205 32	130 30	900 96
Contingencies		35 93	954 00		98 00			1,171 96			6 55	13 50	2,279 94
Totals	813 12	1,022 54	1,820 81	884 47	480 24			1,191 91	121 42	456 50	1,055 20	950 00	8,796 21
Working expenses	751 89	933 57	1,788 41	643 10	480 24			1,171 96		456 50	849 88	819 70	7,895 25
Repairs, ordinary	61 23	88 97	32 40	241 37				19 95	121 42		205 32	130 30	900 96
Totals	813 12	1,022 54	1,820 81	884 47	480 24			1,191 91	121 42	456 50	1,055 20	950 00	8,796 21

DREDGE 'RICHELIEU.'

Wages	351 29	365 00	287 50	395 00	378 99			10 58	104 97	232 00	353 60	381 00	2,859 93
Coal		10 01	165 90	221 01	131 63			295 24				720 09	1,543 88
Provisions	113 71	123 00	121 00	123 00	107 00						83 50	102 50	773 71
Stores	2 84	8 05		7 45	1 55						18 46	55 65	94 00
Equipment				4 94	69 00						3 00	3 00	79 94
Repairs	85 40	151 86	42 74	13 75	2 14						67 32	161 74	524 95
Towage	23 00	5 00	10 00	3 15	5 00								46 15
Contingencies	284 80	263 50	264 00		33 10					22 70		1 97	870 07
Totals	861 04	926 42	891 14	768 30	728 41			305 82	104 97	254 70	525 88	1,425 95	6,792 63
Working expenses	775 64	774 56	848 40	754 55	726 27			305 82	104 97	254 70	458 56	1,264 21	6,267 68
Repairs, ordinary	85 40	151 86	42 74	13 75	2 14						67 32	161 74	524 95
Totals	861 04	926 42	891 14	768 30	728 41			305 82	104 97	254 70	525 88	1,425 95	6,792 63

CLASSIFICATION OF DISBURSEMENTS of the Dredges during the Year ended 30th June, 1904—*Continued.*

DREDGE 'ST. LOUIS.'

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	370 00	370 00	370 00	370 00	264 01					293 01	370 00	473 00	2,880 02
Provisions	103 00	103 00	103 00	103 00	66 67			3 00			137 33		619 00
Repairs	4 17											2 40	6 57
Towage									15 00				15 00
Contingencies		1 20	1 00					3 00					5 20
Totals	477 17	474 20	474 00	473 00	330 68			6 00	15 00	293 01	507 33	475 40	3,525 79
Working expenses	473 00	474 20	474 00	473 00	330 68			6 00	15 00	293 01	507 33	473 00	3,519 22
Repairs, ordinary	4 17											2 40	6 57
Totals	477 17	474 20	474 00	473 00	330 68			6 00	15 00	293 01	507 33	475 40	3,525 79

DREDGE 'NITHSDALE.'

Wages	392 00	392 00	392 00	392 00	352 24		40 00				386 93	406 00	2,752 17
Coal				496 67	223 01								719 68
Provisions	113 00	113 00	140 00	113 00	118 97						102 25	110 00	810 12
Stores					69 05								69 05
Repairs	12 70				10 75								23 45
Pilotage		4 00											4 00
Contingencies	1,265 00	1,240 00	1,200 00	1,240 00	1,091 00						1,240 00	1,200 00	8,476 00
Totals	1,782 70	1,749 00	1,732 00	2,241 67	1,865 02		40 00				1,729 18	1,715 00	12,854 57
Working expenses	1,770 90	1,749 00	1,732 00	2,241 67	1,854 27		40 00				1,729 18	1,715 00	12,831 12
Repairs, ordinary	12 70				10 75								23 45
Totals	1,782 70	1,749 00	1,732 00	2,241 67	1,865 02		40 00				1,729 18	1,715 00	12,854 57

DREDGE 'T. F. M. No. 1.'

Wages	66 25	65 00	78 00	67 50	40 00						36 00	78 00	430 75
Contingencies	2,080 00	2,029 85	2,080 00	2,072 00	1,201 85						840 00	2,080 00	12,383 70
Totals	2,146 25	2,094 85	2,158 00	2,139 50	1,241 85						876 00	2,158 00	12,814 45
Working expenses	2,146 25	2,094 85	2,158 00	2,139 50	1,241 85						876 00	2,158 00	12,814 45
Totals	2,146 25	2,094 85	2,158 00	2,139 50	1,241 85						876 00	2,158 00	12,814 45

DREDGE 'LITTLE GIANT.'

Wages	67 50	65 00	65 00	111 00	54 60						30 00		393 10
Towage							136 00						136 00
Contingencies	1,772 00	2,076 00	2,068 00	2,123 35	1,152 00						960 00	2,072 00	12,223 75
Totals	1,839 50	2,141 00	2,133 00	2,234 35	1,206 60		136 00				990 00	2,072 00	12,752 45
Working expenses	1,839 50	2,141 00	2,133 00	2,234 35	1,206 60		136 00				990 00	2,072 00	12,752 45
Totals	1,839 50	2,141 00	2,133 00	2,234 35	1,206 60		136 00				990 00	2,072 00	12,752 45

'DREDGE No. 4 COHEN & SONS.'

Wages	67 50	65 00	38 75	26 67	22 50						93 65	35 00	349 07
Stores												2 50	2 50
Repairs											1 50		1 50
Towage							992 00						992 00
Contingencies		2,050 00	1,544 00	312 00	1,060 00	1,896 00					1,440 00	2,064 00	10,366 00
Totals	67 50	2,115 00	1,582 75	338 67	1,082 50	1,896 00	992 00				1,533 65	2,101 50	11,711 07
Working expenses	67 50	2,115 00	1,582 75	338 67	1,082 50	1,896 00	992 00				1,533 65	2,101 50	11,699 57
Repairs, ordinary											1 50		1 50
Totals	67 50	2,115 00	1,582 75	338 67	1,082 50	1,896 00	992 00				1,535 15	2,102 50	11,711 07

CLASSIFICATION OF DISBURSEMENTS of the Dredges during the Year ended June 30, 1904—*Continued.*

DREDGE 'OTTO.'

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	81 00	81 00	78 00	81 00									321 00
Contingencies	1,620 00	1,560 00	1,332 00	1,227 00								252 00	5,991 00
Totals	1,701 00	1,641 00	1,410 00	1,308 00								252 00	6,312 00
Working expenses	1,701 00	1,641 00	1,410 00	1,308 00								252 00	6,312 00
Totals	1,701 00	1,641 00	1,410 00	1,308 00								252 00	6,312 00

DREDGE 'CENTRAL CITY.'

Wages											9 00	78 00	87 00
Contingencies											200 00	1,648 00	1,848 00
Totals											209 00	1,726 00	1,935 00
Working expenses											209 00	1,726 00	1,935 00
Totals											209 00	1,726 00	1,935 00

DREDGE 'N. 4 DALY.'

Wages		78 00	75 00	72 00							9 00	78 00	312 00
Contingencies		1,908 00	1,924 00	1,924 00							200 00	1,956 00	7,871 00
Totals		1,9.6 00	1,999 00	1,955 50							209 00	2,034 00	8,183 00
Working expenses		1,986 09	1,999 00	1,955 00							209 00	2,034 00	8,183 00
Totals		1,986 00	1,999 00	1,955 00							209 00	2,034 00	8,183 00

DREDGE 'TRENTON.'

Wages												36 00	36 00
Contingencies												1,824 00	1,824 00
Totals												1,860 00	1,860 00
Working expenses												1,860 00	1,860 00
Totals												1,860 00	1,860 00

PROVINCE OF MANITOBA.

DREDGING WHITEMUD RIVER.

The dredge 'Manitoba' operated about the White Mud river, widening and deepening the channel. Thirteen thousand eight hundred and fifty-one cubic yards were removed during the months of July and August, 1903, at the cost of $3,469.70.

The dredge was subsequently moved to the outlet of Lake Francis, where the total excavation, up to June 30, 1904, aggregated 30,822 cubic yards at the cost of $2,982.32. The total quantity of material removed by this dredge during the fiscal year ended June 30, 1904, is 44,653 cubic yards, at the total cost of $6,452.02 or an average cost per cubic yard of a little over 14 cents.

A little difficulty was experienced in starting the work at Lake Francis, as there was no shelter for the plant.

The dredge stood outside during one or two severe storms, but beyond being a little strained, suffered no great damage, and soon made headway enough into the cut to shelter herself.

DREDGING LAKE FRANCIS OUTLET.

The dredge 'Manitoba' and vessels were removed to Lake Francis at the latter end of August, 1903, and the dredging of an entrance into the inner lake was immediately started, between the guide piers, the dredge worked until time came to lay up the plant into winter quarters.

A safe berth was dredged, and the dredge and vessels placed therein for the winter season. Operations were resumed in the spring, 1904. The entrance channel was deepened and widened, and the work of dredging a small turning basin inside was commenced. The total quantity excavated is 30,822 cubic yards at the cost of $2,282.32, or an average per cubic yard of 9⅔ cents.

MANITOBA DREDGES.

Dredge 'Winnipeg.'

The dredge 'Winnipeg's' operations during the season 1903, were confined to dredging the new channel at the mouth of the Red river. The quantity of material moved during that period was 43,230 cubic yards. In 1904, up to June 30, after buoying the channel at the mouth of the Red river, as is customary, the dredge removed some bars that had formed during freshets, and storms, in the old channel, and excavated 11,000 cubic yards, making a total excavation of 54,230 cubic yards removed and dumped into deep water at distances varying from half to one and a half miles.

The total expenditure has been $11,999.76, or an average cost per cubic yard of 22 cents.

The work on the new channel, consists in a cut of an average width of 65 feet, and a depth of 11 feet.

DREDGE VESSEL REPAIRS.

The work of repairing the dredges and plant was proceeded with, and the sum of $7,199.33 was expended during the fiscal year 1903-04.

The dredge 'Manitoba' that had been pretty well battered during one or two storms, was repaired; some new planking was put in, spuds and slides repaired, the dredge re-caulked, and the machinery overhauled. The two scows and the little tug, also underwent the ordinary amount of repairs that is generally required after a season's operations.

The dredge 'Winnipeg' also received an ordinary amount of repairs, but the latter dredge's two scows had to be hauled up and completely gone over, bottom and end planks renewed, recaulked throughout, rollers renewed, &c. The hull of the tug 'Victoria' was also renewed, the old one having become entirely unsafe and water logged, and the boiler intended to replace the tug 'Sir Hector's' boiler, was ordered, so that both dredges 'Winnipeg' and 'Manitoba' were left in a very good and safe working condition.

Classification of Disbursements of the Dredges during the Year ended 30th June, 1904.

DREDGE 'MANITOBA.'

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	1,061 98	734 35	657 37	611 03	80 00	249 25	80 00	93 90			620 75	552 00	4,741 03
Wood						7 94							7 94
Provisions	207 16	15 07	115 25	30 19	81 70	11 05					13 65		474 07
Equipment	87 73	132 62									13 40	11 83	245 58
Repairs	16 00	75 94	39 74	114 59		222 25	57 16	20 00				33 88	609 56
Towage		176 00			44 00								220 00
Contingencies	43 10	86 00	6 45	14 72							3 57		153 84
Totals	1,415 97	1,220 38	818 81	800 53	205 70	490 49	137 16	113 90			651 37	597 71	6,452 02
Working expenses	1,399 97	1,144 44	779 07	655 94	205 70	268 24	80 00	93 90			651 37	563 83	5,842 46
Repairs, ordinary	16 00	75 94	39 74	144 59		222 25	57 16	20 00				33 88	609 56
Totals	1,415 97	1,220 38	818 81	800 53	205 70	490 49	137 16	113 90			651 37	597 71	6,452 02

DREDGE "WINNIPEG."

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	1,031 91	890 70	789 05	626 48	243 00	84 00	80 00	87 20			686 25	850 30	5,368 89
Coal	797 39	914 81		205 90	603 08						149 76	360 37	3,031 31
Wood	10 25	5 50		8 00	3 50			228 25					255 50
Provisions	259 77	392 51	221 82	163 65	44 55						296 51	184 41	1,563 22
Equipment		36 92	79 50	60 00	27 00						142 36		345 78
Repairs	556 03	79 68	150 81	284 38	49 01			76 67			100 99	32 19	1,329 76
Contingencies	19 00	17 55	10 25	13 75							6 00	38 75	105 30
Totals	2,674 35	2,337 67	1,251 43	1,362 16	970 14	84 00	80 00	392 12			1,381 87	1,466 02	11,999 76
Working expenses	2,118 32	2,257 99	1,100 62	1,077 78	921 13	84 00	80 00	315 45			1,280 88	1,433 83	10,670 00
Repairs, ordinary	556 03	79 68	150 81	284 38	49 01			76 67			100 99	32 19	1,329 76
Totals	2,674 35	2,337 67	1,251 43	1,362 16	970 14	84 00	80 00	392 12			1,381 87	1,466 02	11,999 76

PROVINCE OF BRITISH COLUMBIA.

DREDGING BRITISH COLUMBIA.

This appropriation covers the services of the hydraulic dredge 'King Edward,' dipper dredge 'Mud Lark,' and snag boat 'Samson' when not engaged in any work which there has been a special or local appropriation—such as Victoria harbour—and is supposed to cover work at different points on the Fraser river and elsewhere as may be required. The snag boat's duties consist of removing snags on the Fraser river from the Gulf of Georgia to Chilliwack, or head of navigation—seventy-five miles—surveying, attending to tide gauge on Sand heads, and looking after, repainting and keeping in place for the Department of Marine and Fisheries, the numerous buoys marking the channels at the entrance to the Fraser. Both dredges and snag boat are kept constantly employed for the entire year.

The dredge 'King Edward' was not released from her work in Victoria harbour until the latter part of November, 1903, when she was removed to Langley Slough on the Fraser river for the purpose of opening the slough immediately in front of the town of Langley. Work was begun on December 14, and completed February 26, 1904. Some considerable repairs were required before commencing the work of giving a navigable channel in the North Arm of the Fraser for logs and tugs in the interest of the local mill owners—which work, after a few days deepening in front of the Royal City Mills, was not commenced until April 20, but was carried on continuously until the end of the fiscal year, or June 30, 1904.

The dredge 'Mud Lark' has been steadily engaged on work in Victoria harbour.

The expenditure for the fiscal year 1903-04, on the service of dredging, British Columbia, as represented by the operations of the dredges 'King Edward' and 'Mud Lark,' and snag boat 'Samson' is as follows :—

Dredge 'King Edward'	$19,806 06
Dredge 'Mud Lark'	6,732 17
Snag boat 'Samson'	9,988 47
	$36,526 70

The expenditure of the above vessels are in detail as follows :—

Dredge 'King Edward.'

Wages	$6,643 89	
Provisions	1,738 14	
Material	6,704 82	
Fuel	3,763 00	
Water	14 31	
Tug hire	840 00	
Contingencies	101 90	
		$19,806 06

Dredge 'Mud Lark.'

Wages	$2,365 05	
Provisions	450 25	
Material	3,188 77	
Fuel	722 25	
Water	5 85	
		6,732 17

Snag Boat 'Samson.'

Wages	$6,556 84	
Provisions	1,465 35	
Material	798 16	
Fuel	1,059 00	
Water	71 42	
Contingencies	37 70	
		9,988 47
Total		$36,526 70

DREDGE REPAIRS, BRITISH COLUMBIA.

This service represents ordinary and extraordinary repairs to the dredges 'Mud Lark' and 'King Edward,' and snag boat 'Samson.' The dredge 'Mud Lark' being an old vessel, has taken up the greatest part of the appropriation for repairs.

The expenditure for the fiscal year 1903-04, on repairs for the respective dredges and snag boat, is as follows :—

Dredge 'King Edward.'

Ordinary	$ 210 55	
Extraordinary	915 00	
		$1,125 55

Dredge 'Mud Lark.'

Ordinary	$ 209 04	
Extraordinary	3,597 94	
		3,806 98

Snag Boat 'Samson.'

Ordinary	$ 66 92	
Extraordinary	Nil.	
		66 92
Total		$4,999 45

DRY DOCKS.

The Dominion government owns and operates three dry docks, viz.: the Lorne dry dock at Lévis, in the province of Quebec ; the Kingston dry dock, at Kingston, in the province of Ontario; and the Esquimalt dry dock, at Esquimalt, near the city of Victoria, in British Columbia.

LÉVIS DRY DOCK.

This property of the Dominion government has been maintained in an efficient manner during the fiscal year 1903-04, and has been occupied by four vessels during the winter months and for 22 days during the open season.

The expenditure for the fiscal year for maintenance of ordinary repairs was $13,833.54.

ESQUIMALT DRY DOCK.

During the year 1903-04, the dock was occupied 154 days by thirteen vesssels, aggregating 43,028 tons and the dues collected for the above services amounted to $9,844.38.

The only new work done during the year was a complete set of electric light poles fitted around the dock for the incandescent lights, and a new offal scow built.

Besides attending to docking vessels, &c., the staff were employed keeping the whole plant in good order, and ready for service at the shortest notice.

The caisson was placed on the outside berth, chipped (where necessary) cleaned and painted inside, with red lead, and outside with Rabtjen's composition paint, other parts were cleaned and painted, this property is kept in first class condition.

The expenditure during the year 1903-04, was $12,849.45.

KINGSTON DRY DOCK.

During the fiscal year 1903-04, the dock has been kept in good working order with the ordinary care to the machinery and caisson. During the season of navigation the dock was occupied for seventy-three days and ninety-three days in the winter season, the number of vessels accommodated was thirty-six, forming a total tonnage of 23,086 tons. During the fiscal year a building was completed to serve as an office, which had to be rented in previous years.

The expenditures during the last fiscal year amounted to $5,084.33 and the revenue from dues collected was $6,989.36.

RIVIÈRE DU LIÈVRE LOCK.

This lock is situated at Poupore, on the Rivière du Lièvre, 12 miles above Buckingham, in the county of Labelle. It was built to overcome the difficulties of navigating the Little rapid, the dam in connection with it also flooded the Long rapid, 6 miles above, and rendered the river navigable up to the foot, of High falls, a total distance of 19½ miles above Buckingham.

Below the last named place, the Lièvre river forms a successsion of rapids and falls, which give extensive water power to a number of saw and pulp mills, over a distance of 3 miles, and the river falls in the Ottawa river, 21 miles below the city of Ottawa. This stretch of navigable water above Buckingham, is an important accom-

modation to the settlers of the upper part of the Rivière du Lièvre, who have no railway communications and it is only of late years that a highway has been built on one side of the river.

The lock and dam were completed in 1892, at a total cost of $233,658.65, they have been kept in good working condition until October 11, 1903, when an extensive land-slide occurrred on the west side of the river, just below the dam. The land-slide covered a distance of about 1½ miles below the dam and a width of about one-quarter of a mile from the river bank, some 200 acres of land under culture were destroyed together with farm houses and outbuildings, the farmers and their families barely escaping with their lives, the accident occurred at 5 o'clock in the morning. The river was completely choked for 6 hours, the water above rose to a height of 15 feet above its original level and then scoured out numerous small channels through the earth filling formed by the land-slide. The upper part of the dam was shoved against the head of water above and 7 feet in height of its top was carried away on a length of 200 feet, the dam is 250 feet long between abutments. Two days after the accident, an officer of the department was ordered to the place with instructions to help as much as possible the carrying on of the traffic.

In a few days, one of the channels through the earth embankment, had been scoured out to a sufficient depth to permit one of the small steamers doing the service on the river to be pulled through it by means of winches, and intended to make the run above the dam, the other steamer remained below. A portage road 1½ miles long was built on the east side of the river to connect its two navigable parts, two freight sheds, 20 x 12 feet, one at each end of the road, were constructed and a contract was awarded to carry the freight and passengers by teams over the portage road.

At its session of 1904, parliament voted an appropriation of $20,000 to be applied towards the reconstruction of the dam, the work has been started.

The amount expended during the fiscal year 1903-04, was $5,517.15.

YAMASKA LOCK AND DAM.

A lock and dam were built in 1886, at Ile a Cardin, on the Yamaska river, 1¾ miles below the village of St. Michel de Yamaska, and about 4½ miles from the mouth of the river, the lock gives a lift of 5¾ feet.

During the fiscal year 1903-04, four lock gates were rebuilt.

The expenditure amounted to $2,611.60.

SLIDES AND BOOMS.

The Dominion government owns and operates slides and boom works, built to facilitate the passage of square timber, round logs, flatted and dimension timber, &c., on the River Ottawa and tributaries, on the lower forty miles or so of the St. Maurice, and in the Trent and Newcastle district, between Fenelon Falls and Heeley's Falls.

In the subjoined reports, the superintending engineers of these river works, Messrs. G. P. Brophy, F. X. Thos. Berlinguet and S. Clegg, give particulars relative to the construction, improvements and repairs carried out under their supervision on government slides, booms, piers, dams, streams, buildings, &c., during the fiscal year, the expenditure incurred for staff, maintenance, improvements, &c., the quantities of the various descriptions of timber that pass through their works, and other information of general interest and utility to lumbermen and the public at large.

REPORT ON THE OTTAWA RIVER WORKS.

(By G. P. Brophy, superintending engineer.)

OTTAWA RIVER WORKS OFFICE,
OTTAWA, September 28, 1904.

EUGÈNE D. LAFLEUR, Esq.,
Acting Chief Engineer,
Department of Public Works of Canada.

SIR,—In accordance with instructions, received in your communication dated June 29 last, I have the honour to submit the following report on the works under my charge, for the fiscal year ended June 30, 1904.

As is the usual custom, the foundations of the various works were examined, at season of low water, and the necessary repairs were done during the autumn and winter months and may be described as follows :—

REPAIRS AT STATIONS ON OTTAWA RIVER (MAIN STREAM).

North Chaudière or Hull.—At this station, a break at the foot of the lower slide was repaired, new sills, sides and flooring were laid for a length of about forty feet, and at the entrance to the slide, the sides, where gouged out, were sheeted with 3-inch plank. At the waste gate, to the west of the slide, a large quantity of saw-logs, drift-wood, &c., was removed, in order to admit of the free regulation of the stop-logs. Two new stop-logs were provided for the waste gate. A portion of the upper slide was also repaired, where the material had worn too thin, a section of 50 feet in length, having been replaced by new timbers. The flooring of this slide was also patched, where found necessary. The guide booms were generally strengthened by new cross fenders and planking. A small supply of timber, suitable for repairs, was purchased for use in case of emergency.

South Chaudière or Ottawa.—At the outlet of the Long slide, a pier was built to lessen the 'pitch-off' at this place. This is a stone-filled crib, covered on top with 3-inch plank and forms an addition to the slide. The pier is 33 feet long, 27 feet wide

and 5 feet high. The stiff guide boom at the foot of the Long slide was overhauled, new timbers, planking, tie-irons and cross-binders having been added to render the boom more serviceable. At the proper season the different guide booms and aprons were disconnected and laid up in winter quarters. As the level of water in the slide and hydraulic channels, is constantly changing, ice had to be cut from the booms, aprons and support piers during the winter to protect these works from damage. At the general storehouse yard, two sheds were built, one 100 feet long, 16 feet wide and 16 feet high to store hoisting crabs, chains and spikes ; the other 46½ feet long, 21½ feet wide and 12 feet high for trucks, carts, heavy irons, &c. These two sheds are sheeted with planed lumber and received three coats of paint. The roofs of the sheds and also those of the two storehouse buildings were covered with three-ply tarred felt paper and gravel.

Chats.—The outlay at this station was for timber, plank and tools for repairs to the glances in the channel, governing dam and slide bulkhead. The sides of the glance piers, in the channel leading to the slide, had become so much worn by passing cribs that the deficiency had to be filled in by new timbers and plank. The dam, on the south side, at the head of the slide, was removed to low water mark for a length of some sixty feet and rebuilt. The crab frame at the lower slide bulkhead was replaced by new material. A supply of timber was also procured for future repairs at this station.

Mountain.—In the spring of 1903, a part of the slide pier, on the west side, at the outlet of the slide, was carried away by high water and had to be replaced. This forms the slide wall of the slide and the portion rebuilt was 40 feet long, 12 feet wide and 8 feet high. The guide boom at the entrance to the slide, weakened by over pressure, was raised and re-inforced by new timbers, held in position by 1-inch screw bolts. A new snubbing post was set in the bank to which the boom was attached by chains. The second bulkhead which was considerably sagged, was levelled to place and new sills were placed on top of the side piers to make a suitable foundation for the posts supporting the cross-stringers.

Calumet.—At the entrance to the third slide the flooring was taken off and three new cross-sills were inserted to take the place of those which were broken.

The apron at the foot of the long slide was taken apart and broken fingers were either renewed or spliced with hardwood plank and screw bolts. The planking on top of the apron was also renewed, and underneath, a cross-sill, carried in proper bearings, was placed to support this structure, at its centre. A section of the side pier of the long slide was rebuilt. This is 136 feet long, 3 feet high and varies in width from 6 feet at the lower end to about 3 feet at the upper end, as the face of the rock is uneven at this point. At different places in the long slide the planking in the bottom was patched and renewed.

Joachim.—The repairs at this station were of a trivial nature and consisted in replacing some missing planks in the bottom of the slide.

TRIBUTARIES OF THE OTTAWA.

Gatineau River.—At this river the tops of the booms were planked with new material and fenders were placed on the piers to protect the corners. During the spring months, ice was cut from around the booms and piers and extra chains and cables were used as a safeguard against excessive pressure from ice and water. As some of the piers, supporting the main boom, are becoming somewhat unserviceable, having been constructed many years ago, repairs of a more extensive character will have to be undertaken shortly, to place these works in thorough state of efficiency. The station house was extended and the old portion re-shingled. The boats and scows were painted and kept in a proper state of repair.

Madawaska River.—At the mouth of the Madawask, two piers, supporting the retaining boom were patched. The top of pier No. 1 (11 feet by 16 feet) in the outside range, was rebuilt for a depth of about 3 feet. New fenders were placed on this pier and also on pier No. 2, outside range.

At Flat rapids two breaks in the face of the flat dam were repaired with 4-inch plank.

At Long rapids a section of the pier dam was rebuilt. The portion repaired is 84 feet long, 12 feet wide and about 4 feet high. As considerable quantity of the stone ballast in this dam was missing, new material was provided to make good the deficiency.

Coulonge River.—At High Falls station the guide boom, at the entrance to the slide, was repaired where damaged and strained by ice shoves last spring. A section of the stiff boom, at the mouth of the slide, was entirely rebuilt. This is 76 feet long, 33 inches wide and 20 inches deep, and forms a feeding platform. The boom is held together by ¾-inch screw bolts and is sheathed in front with 3-inch, maple plank, to prevent excessive wear. Near the head of the slide, a snubbing pier had to be rebuilt from low water line. It is 22 feet long, 16 feet wide and 8 feet high, the east end being sheathed with 3-inch pine plank, to prevent the water leaking through at the rear of the pier. Rock bolts 1¼-inch iron were placed in the solid rock to secure the pier to the bank, which slopes off at this point. Some missing planks were placed on the face of the rolling dam, at the head of the slide. The slide was repaired at different places through its entire length (3,000 feet). Some 575 lineal feet of timber were used in renewing the posts and sills, and 11,000 feet board measure, 3-inch hard maple and oak plank were laid in the slides where the sheeting was defective.

Black River.—The Sheeting in the sides and bottom of the slide at High Falls was patched and renewed where found necessary, and a large number of flat iron bars, fastened with split spikes, were set at the curves where the wear was the greatest. In May, 1904, at a point about 150 feet from the outlet of the slide a break occurred, extending over a distance of 86 feet. This was speedily repaired so that very little delay was occasioned by the accident. Twenty new cross sills, supported on a crib filled with stone, were put in and the new side of the slide was built of solid timber.

Petewawa River.—At Second Chute station, a hole in the main governing dam was repaired. The water was drawn off from the basin above the dam, logs and timber were removed from the hole and the breach was covered with 4-inch plank.

At Third Chute station, iron bars were placed on the faces of the glance piers to protect them from abrasion by passing logs and timber. A number of rocks were blasted to improve the running in the timber channel. A pier 12 feet square was built to strengthen the boom at the north side of the feeding gap; and on the south side, the snubbing pier was shifted up stream to give the guide boom the proper slant to feeding gap. The latter pier is 16 feet square by four courses high.

At Crooked Chute, eighteen pieces of boom timber were purchased for repairs to the boom pier and to the slide at this station.

About half a mile below the outlet of Trout lake, the lower portion, 180 feet in length, of a flat dam was patched. New timbers were laid and 4-inch sheathing placed on the face.

At meno rapids, about 1½ miles above McDougald's slide, a flat dam 30 feet long, and 7 feet face, was built. A pier dam 65 feet long and ten feet high was also repaired at this station. Decayed timbers were removed and replaced by new ones and a quantity of ballast was placed in the pier.

At McDonald's station, a number of the slide posts were renewed and the sheathing was patched. Planking on the face of the governing dam was also renewed.

The large retaining dam at the outlet of Cedar lake had become so much dilapidated, that extensive repairs had to be undertaken, to place this work in serviceable

condition. The bulkhead platform and crab frames, which had been rebuilt more recently, were removed and the piers supporting them were rebuilt. There are three of these piers, forming two sluiceways, or gates. Each pier is 24 feet long, 12 feet wide and 12 feet high above the flooring in the gates. The wing dam at the north end of the bulkhead was rebuilt. This is a pier, filled with stone, 175 feet long, 8 feet wide (except the portion adjacent to the bulkhead pier, which is 13 feet wide at the foundation) and varies in height from 3½ feet at the north end to 8½ feet at the south end. The flooring of the north gateway was relaid, with 8-inch material. The top of the apron, immediately before the flooring in the north gate was rebuilt. This is 8 inches thick and is carried on 12-inch by 12-inch cross-sills. The top of the apron and the sides of the piers in the north gate were covered with ¼-inch iron to protect the exposed surfaces. The sides of the piers in both gates, above the stop-log checks, were sheathed with 6-inch plank to provide the proper glance. Angle irons, 3½ inches by 7 inches by 9-16-inch by 9 feet long, were placed on all the lower corners of the stop-log checks. At the entrance to both gates, eight fenders, 10 feet long, were placed to protect the corners. Eighteen stop-logs, with staple attachments, were provided for the bulkhead. Two piers to support the guide boom were built 205 feet above dam. These are 16 feet square at the base, 10 feet square at the top and 14 feet high, and form a gap 45 feet in width, from which logs are fed to the sluiceway. A course of timber was laid on top of the pier dam forming the south wing, as this structure was too low during the season of high water. The guide booms leading to the sluiceways were overhauled and placed in proper position.

In the spring of 1904 the water in the Petewawa river rose to an exceptionally high pitch, and, in consequence of this, two of the glance piers at the third chute were unable to withstand the extreme pressure and were dislodged. At Crooked Chute the top of a pier supporting the guide boom was carried away and the fastening at the upper end of the boom was torn out.

Dumoine River.—At High Falls station, three piers supporting the main guide boom were repaired by placing 10-inch by 10-inch by 10-feet upright timbers on the sides, and connecting the centre ones by hook bolts of 1-inch iron and ¾-inch chains, with a view of binding the piers together and preventing the side walls from spreading. The guide booms were patched and properly stretched and secured. The sheeting in the sides and bottom of the slide was repaired where found defective. Iron bars were placed at curves in the slide, and at the corners in the bottom, timbers were set to stiffen the structure and protect the side walls. A short distance from the entrance of the slide, where it pasess over a deep gulch, the high bents supporting the superstructure were stiffened by diagonal braces.

Last spring the water in the Ottawa river and its tributaries was unusually high, and during the period covered by this report, remained at a very favourable pitch for log driving operations, and the indications are that all the drives will reach their destination successfully.

The following statement, prepared from information furnished by the collector of revenue in your department, shows the number of pieces of the various descriptions of timber that passed these works and the revenue accrued thereon, during the fiscal year ended June 30, 1904 :—

	Pieces.
Square timber	15,092
Saw-logs	4,314,524
Boom and dimension timber	151,598
Cedars	141,362
Railroad ties	466,124
Fence posts	139,077
Total	5,227,777

Also 13,672 $\frac{31}{10}$ cords pulpwood.

The revenue accrued on the above was $41,756.85.

I have the honour to be, sir,
Your obedient servant,

GEO. P. BROPHY,
Superintending Engineer, Ottawa River Works.

STATEMENT showing Expenditure for Repairs to Works on Ottawa River and Tributaries for fiscal year ended 30th June, 1904.

Name of Station.	Province.	Electoral District.	Expenditure from July 1, to Dec. 30, 1903.	Expenditure from Jan. 1, to June 30, 1904.	Expenditure from July 1, 1903 to June 30, 1904.
Ordinary Repairs—Ottawa River Works.			$ cts.	$ cts.	$ cts.
Ottawa River, Main Stream—					
North Chaudière Station	Quebec	District of Wright	451 46	430 53	881 99
South " "	Ontario	City of Ottawa	1,635 74	972 76	2,608 50
Chats Station	"	N. Riding Co. Renfrew	3 76	494 60	498 36
Mountain "	Quebec	County of Pontiac		596 57	596 57
Calumet "	"	" "		517 20	517 20
Joachim "	"	" "		14 94	14 94
			2,090 96	3,026 60	5,117 56
Tributaries of Ottawa River—					
Gatineau River	Quebec	District of Wright	114 13	733 14	877 27
Madawaska "	Ontario	S. Riding of Co. Renfrew		407 01	407 01
Coulonge "	Quebec	County of Pontiac		1,076 17	1,076 17
Black "	"	" "		269 86	269 86
Petewawa "	Ontario	N. Riding of Co. Renfrew and Nipissing.	3,488 15	2,528 50	6,016 65
Dumoine "	Quebec	County of Pontiac	425 70	553 24	978 94
			4,057 98	5,567 92	9,625 90
Total, Ottawa Riv. Wks.					14,743 46
Ordinary Repairs—Bridges at Ottawa and Roadway and Bridge Approaches between Ottawa and Hull.					
Chaudière Bridge	Ontario	City of Ottawa	60 50	243 85	304 35
Union "	" & Quebec	" Dist. of Wright	261 50	165 48	426 98
Hull Slide "	Quebec	District of Wright	16 25	31 12	47 37
Roadway and Bridge Approaches between Ottawa and Hull	Ontario and Quebec	City of Ottawa and District of Wright.	547 92	624 03	1,171 95
Total for bridges, Ottawa			886 17	1,064 48	1,950 65
Extraordinary Repairs—					
Joachim Bridge Approaches	Quebec	County of Pontiac	81 00		81 00
Laurier Bridge Approaches	Ontario	City of Ottawa	1,965 62	401 06	2,366 68
Dufferin Bridge—Ottawa	"	" "		1,350 00	1,350 00
Total					20,491 79

JOS. KENT,
Acting Accountant.

OTTAWA, September 20, 1904.

REPORT ON THE TRENT AND NEWCASTLE DISTRICT WORKS.

PETERBOROUGH, August 15, 1904.

EUGÈNE D. LAFLEUR, Esq.,
Acting Chief Engineer,
Department of Public Works,
Ottawa, Ont.

SIR,—In compliance with your request in your letter of June 29, 1904, I have the honour to submit the following report on the works under my charge on the Trent river and the water tributary to it, for the year ending June 30, 1904.

These works extend from the Bay of Quinte on the south to Balsam lake on the north.

Healeys Falls.—The works here are in good repair.

Hastings.—The booms were repaired, and some minor repairs were done to the slide.

Otonabee River, near Rice Lake.—Two piers 12 x 16 feet were rebuilt from the water line and filled with stone. These piers are used for attaching booms to, when running the logs out into the lake.

Little Lake Peterborough.—The boom here is about half mile long, there are four anchor piers; the booms were taken off in the fall and placed in winter quarters and replaced in the spring and repaired.

Ketchewanna Lake.—The boom dividing the lake, making a log and a boat channel from Youngs point to Lakefield, a distance of four and a half miles, has been put in first-class repair, chains and new anchors were renewed where required. This boom was never in better shape.

Burleigh Falls.—The work of building a glance pier 12 x 32 feet above the falls, also a small pier 10 x 10 feet and putting on a stiff boom to guide the logs to the falls and putting in two sets of stop-logs in the dam to contract the water in the channel and improve the channel of logs, has been completed.

Stop-logs were put in the old slide, also new sheathing on the flat dam ; at the old slide some new braces were put in and minor repairs done.

Love Sick Lake.—The boom here is about half mile long, it was overhauled and put in position.

Deer Bay.—The boom here was put in position and some minor repairs done.

Buckhorn.—The work of removing large boulders from the channel was completed. And the side pier at the foot of the slide was sheeted with 3-inch elm plank, some new sheeting was put in the slide, new stop-log posts, and the stiff boom were repaired.

Fenelon Falls.—The booms here were overhauled and put in good order ; a new set of stop-logs in the slide, the repairs to the slide consisted in putting a new set of stop-logs, new planking on the platform and new sheeting. The winch used in sweeping out logs from the eddy was placed in working order.

I have the honour to be, sir,
Your obedient servant,

S. CLEGG,
Superintendent.

REPORT OF THE ST. MAURICE RIVER WORKS.

(By F. X. Thos. Berlinguet, superintending engineer.)

THREE RIVERS, October 10, 1904.

EUGÈNE D. LAFLEUR, Esq.,
Acting Chief Engineer,
Public Works of Canada, Ottawa.

SIR,—I have the honour to submit the following report on the works under my charge on the St. Maurice river and certain of its tributaries, for the fiscal year ended June 30, 1904.

The St. Maurice works were commenced in December, 1851, at Three Rivers. Shawinegan and Grand Mère, and additions thereto, to a limited extent, have been made nearly every year since.

The principal government works extend up the river for a distance of about one hundred and thirty miles from the outlet.

The fluctuation of the water level on the St. Maurice river, during the time of the floating of the logs for the commercial season of 1903, has been fairly good on the main river, but, on many of the tributaries, the duration of the freshets has been too short for the number of logs to be floated, consequently many of the logs were left for the following season.

The following is a statement of the dates of the opening and closing of the booms for the sluicing of the logs at Three Rivers, during the last few years :—

	Number of logs sluiced.
1903—Opening May 28, closing November 13	1,351,587
1902—Opening April 23, closing November 11	1,460,440
1901—Opening June 4, closing November 11	629,982
1900—Opening April 4, closing October 22	864,446
1899—Opening June 3, closing November 18	882,004

At the low water season of 1903, after the drives had passed, the foundations of the various river structures were examined and a commencement made of the necessary repairs and improvements. The work was continued during the closed season of navigation and early spring months, in order that everything would be in readiness for the opening of the commercial season of 1904.

These works may be described as follows :—

Pointe à Trudel booms.—On the 40th mile of the St. Maurice river, 1,412 lineal feet of the booms, also three mooring piers, were examined and put in good condition for the coming season.

Pointe Medeleine booms.—On the 39th mile, 2,588 lineal feet of booms, also ten piers were examined, stone ballast was put in the piers where necessary. A number of boom chains were supplied.

St. Jacques des Piles booms.—On the 38th mile from the outlet, 2,176 lineal feet of 5 to 6 ply booms, also seven mooring piers and two anchor piers were put in good condition. A number of boom chains were supplied. Stone ballast was put in the piers where necessary, and ordinary repairs were made to boats, scows, stationhouse and fences.

Ste. Flore booms.—On the 34th and 35th miles on the St. Maurice, built since 1896, are situated above the sluicing gaps at Grand Mère, to check the floating of

the logs coming in too great quantity for the proper assorting of the logs at Grand Mère. The booms were stretched, for the first time, from creek Sauvageau, to 'Ile Arthur,' in 1898; and from the island to Pte. à Giguère in 1899, 3,997 lineal feet of three ply booms, 1,109 feet of four ply booms, and 202 feet of five ply booms were put in good condition, also ten mooring piers were repaired. A number of boom chains were supplied.

Pointe à Paquin Booms.—On the 33rd mile, 4,238 lineal feet of five and eight-ply booms were stretched in position where four mooring piers and three jam piers are built.

Pointe à Trahan booms.—On the western side of the river, on the 33rd mile, 2,400 lineal feet of booms were placed from shore to pier No. 4.

Rapide des Hêtres booms.—On the 26th mile, 600 lineal feet of three and two-ply booms were put in good condition, and the dam closing the eastern channel was raised a few feet and stone-filled.

Pte. A. Bernard booms.—On the 22nd and 23rd mile, two new mooring piers were built and fourteen mooring piers and three jamb piers were put in good condition. A number of boom chains was supplied.

Shawinegan slide.—On the 21st mile, a section of the bottom and sides of the slide were repaired by replacing the worn-out timber and planking with new material, the apron faced with hardwood, and the projecting spikes in the bottom and sides of the slide were countersunk.

Ile aux Toutes booms.—On the 17th mile, 11,805 lineal feet of one to seven-ply booms were put in good condition, and were left stretched for the winter to close the eastern channel above the island and the western channel below the said island. One jamb pier was raised and stone-filled.

Cap aux Corneiles booms.—On the 3rd mile, 1,246 lineal feet of eight-ply booms, 2,614 feet of six-ply booms, 294 feet of five-ply booms, 1,933 feet of four-ply booms and 1,005 feet of two-ply booms were put in good condition, also twenty-five piers were patched at the corners and on the faces where damaged. Posts were renewed, where worn out and decayed.

Cap aux Corneilles western booms, Three Rivers sluicing gates.—On the 2nd mile, a new jamb pier 30 x 40 x 30 feet also 1,400 lineal feet of three-ply booms were built to increase the sluicing of logs by adding more gaps. 108 lineal feet of seven-ply booms, 777 feet of six-ply booms, 402 feet of four-ply booms also seven mooring piers were examined and put in good condition.

1,003,428 logs for Grand'Mère, 354,423 logs for Shawinegan, and 1,351,587 logs for Three Rivers, in all 2,709,438 logs have passed the government works during the season 1903.

Eastern and Ile St. Quentin booms.—At the outlet, 1,070 lineal feet of seven-ply booms, 1,300 feet of six-ply booms, 3,121 feet of five-ply, 4,750 feet of four-ply, 1,851 feet of three-ply booms, and 4,567 lineal feet of two-ply booms, also 43 mooring piers were examined and put in good condition, also the construction of an anchor pier in the eastern channel.

I have the honour to be, sir,
Your obedient servant,

F. X. THOS. BERLINGUET,

BRIDGES AND ROADS.

It may be stated that, in the older provinces of the Dominion, the federal government has confined itself as a rule to take under its exclusive control and make provisions towards the construction and maintenance of important interprovincial road bridges and bridges required across waterways.

In the sparsely settled districts of the North-west Territories, the government of Canada has undertaken to provide for the erection and maintenance of ordinary road bridges over large streams; bridges that are urgently needed to afford uninterrupted communication through trails and highway of national importance, which neither the municipalities to be more immediately benefited by the structures, nor the territorial authorities most directly concerned, could be expected to erect and maintain at their sole expense.

During the last fiscal year works have been executed on the following bridges:—

OTTAWA BRIDGES.

Bridges at Ottawa, and roadway and bridge approaches between Ottawa and Hull.

The roadway of Chaudière bridge, over the south Chaudière slide and hydraulic channels, was cleaned and the rubbish carted off. At the Middle street approach to this bridge, about 15 superficial yards of sand-stone paving were taken up and relaid, as this portion had settled from the proper grade.

The roadway of Union bridge was cleaned as occasion required. The sidewalk on the east side was relaid. Stringers 4 by 10 inches on the lower side, and 3 by 8 inches on the upper side, were laid on the iron floor beams: and upon these stringers were laid two courses of pine plank, the lower being 3 inches and the upper 2 inches thick. The top course of the roadway was relaid with 3-inch hemlock plank.

The roadway of the Hull slide bridge was cleaned at different times when found necessary.

The sidewalk along the causeway leading to Hull, from the stone dam to a point 150 feet westward, was relaid. Cross sills 3 by 6 inches and 3-inch covering were used for this work. The wheel guards, hand-rails, &c., were patched where found defective. The waste water pipes and gutter grates were kept clean, and from time to time, this thoroughfare was cleaned throughout its entire length. At certain places where depressions in the roadway existed, the granite paving blocks were raised and relaid to proper grade.

During the winter months, surplus ice and snow were removed from the sidewalks and roadways of the different bridges and the causeway leading to Hull, for convenience of those having occasion to use these thoroughfares.

Laurier Bridge Approaches, Ottawa.—The approach to the Laurier bridge over the Rideau canal, between Nicholas street and the bridge, was laid with Nepean sandstone paving blocks, the length being about 265 feet. The surface at sub-grade was thoroughly tamped, and the paving was then laid on a bed of sand, the top joints being well grouted with cement mortar. Granolithic sidewalks were also built on this approach, on both sides, from Nicholas street westward, to join those on the bridge.

Dufferin Bridge, Ottawa.—A supply of paving blocks, sufficient to pave the roadway of this bridge has been purchased and these are piled in close proximity to the eastern end of the bridge.

ONTARIO AND QUEBEC.

DES JOACHIMS BRIDGE APPROACHES.

The only outlay chargeable to this work was a payment for the use of a power derrick, when building the retaining walls on the Quebec side of the approach to the interprovincial bridge over the Ottawa, at Rapides des Joachims.

PORTAGE DU FORT BRIDGE.

Portage du Fort is on the north shore of the Ottawa river, in the county of Pontiac, 60 miles, above the city of Ottawa.

At this place an island divides the River Ottawa into two channels, called the North and South channels, the village of Portage du Fort is on the north shore of the North channel.

In the fall of 1901, with contributions from local government of Quebec and Ontario, the department completed a steel bridge across the south channel. The bridge over the north channel was then unsafe for traffic, and it being considered as forming part of the interprovincial bridge uniting the two provinces, the department decided to also renew this bridge with a steel structure of one span 200 feet in length.

In June, 1903, a contract was entered into with Mr. Thomas Moran, of Arnprior, for the construction of the two abutments and approaches on both shores for the sum of $10,797. The contract for the steel work was awarded on August 25, 1903, to the Locomotive & Machine Co., of Montreal, for the sum of $9,750.

The work on the masonry abutments and approaches was started in July, 1903, and at the end of November of that year, the abutments were nearly completed and ready to receive the steel superstructure. The abutments are built U-shape, on a rock foundation, of first class rock faced ashlar masonry, laid in Portland cement mortar of the best quality.

The approaches consist of rip-rap walls sloping one in one on their outer faces filled between with earth, and 24 feet wide at top.

At the end of the fiscal year, the erection of the steel superstructure had not been commenced.

The amount paid to the masonry contractor up to June 30, 1904, was $9,930. Minor repairs to the old bridge, in order to keep it open for traffic pending the construction of the new bridge, the superstructure and contingencies amounted to $820.72, making a total expenditure of $10,750.72, for the year 1903-04.

NORTH-WEST TERRITORIES.

LANGEVIN BRIDGE, CALGARY.

Calgary, district of Alberta, is situated on the Bow river, also on the main line of the Canadian Pacific Railway. The Bow river is crossed here by a Howe Truss bridge of three spans and a trestle approach on the south side.

During the fiscal year 1903-04, the sum of $700 was expended in re-flooring the bridge.

EDMONTON BRIDGE.

Edmonton is situated in Northern Alberta, on the north side of the north branch of the Saskatchewan river, 194 miles north of Calgary.

A bridge was constructed across the Saskatchewan at Edmonton, consisting of three piers and two abutments of concrete, and a steel superstructure. It is a combined railway and traffic bridge, completed in 1900.

During the fiscal year 1903-04, the flooring was renewed at a cost of $1,550.

BATTLE RIVER BRIDGE.

A bridge was built across the Battle river, at Battleford, in 1890 and collapsed in 1900. A steel superstructure was built in 1902, on the old wooden piers.

In the spring of 1904, the water rose to 18 feet above low water, or to within one foot of the lower chords. The strong current undermined the foundation of the north abutment, the sum of $500 was expended on urgent repairs.

HYDROGRAPHIC SURVEY.

RIVER ST. LAWRENCE.

During the fiscal year 1903-04, the main triangulation work between Grondines and Pointe Platon was all completed and the re-triangulation of Lake St. Peter begun, but the latter could not be completed before the winter owing to unfavourable weather and difficulties encountered with.

Gaugings were also recorded at the different gauge stations between Sorel and Pointe Platon until the middle of November last.

The St. Lawrence river was sounded between Lotbinière and Pointe Platon, all but a gap of about two miles between the head and the foot of the Richelieu Rapids. The sounding party was called to winter quarters on October 15 last, as the weather was no more favourable for outdoor work.

Few current observations were also taken.

During winter the entire staff was kept busy plotting the summer work, making water profiles, calculating main triangulation and latitudes and departures, latitudes and longitudes, &c.

In the spring all the working plans were complete and up to date as far as Pointe Platon.

The charts for publication are progressing rapidly and are now ready for the printer as far as Batiscan.

It was only on June 1, 1904, that outdoor work could be begun.

From this date until June 30, the main triangulation staff has reset gauges at four gauge stations between Lotbinière and Pointe Platon and has dressed all the main triangulation stations in this same district for the use of the sounding party. Observations were also made in the vicinity of Grondines in order to tie in the six new lighthouses built by the Department of Marine and Fisheries during the winter.

During June the soundings were also completed in the Richelieu Rapids and quite a few doubtful lines sounded in the preceding fall were sounded over again to ascertain accuracy.

The amount expended during the fiscal year was $281,071.01.

This amount does not comprise stationery, trips of Ottawa officials and the pay of the crew of the 'de Lévis.'

CEMENT LABORATORY,
DEPARTMENT OF PUBLIC WORKS,
August 11, 1904.

E. D. LAFLEUR, Esq.,
Acting Chief Engineer,
Department of Public Works.

SIR,—I have the honour to inclose herewith the annual report of this branch of the department for the year ended June 30, 1904.

I am, sir,
Your obedient servant,

GEO. E. PERLEY,
Engineer in charge.

Since June 30, 1903, all samples submitted to this office have been fully tested and reported upon.

Information has been supplied to the Railways and Canals, Marine Department, Militia Department, also the architects and engineers of the department, contractors and manufacturers.

A crushing machine has been installed in the laboratory and a numebr of 8-inch cubes were made in the laboratory and the elevator in Montreal, the latter were shipped here, a great number have been tested. These cubes were made under varied conditions as will be noted on their respective sheets.

New offices have been fitted up for the general physical and chemical test of cement thus allowing room for crushing machine, and a transverse testing machine for beams of reinforced concrete (20) twenty feet long by (12) twelve inches by (12) twelve inches, this machine will be installed in the old office on a concrete foundation allowing the beams which are manufactured elsewhere being passed through a window by means of an overhead traveller.

The work of this branch has reached such large proportions that another assistant has been called for, from six weeks to three months is required to instruct an assistant in the manipulation of the method of making uniform briquettes, the individual equation playing a very important part in the making of them, it requires one person's whole time, and continual practice and personal ingenuity to bring the briquettes to perfection.

In March of this year the testing laboratories of the United States government were visited and various testing machines were inspected and all the latest methods adopted by the United States were fully investigated thus enabling this laboratory to keep abreast of the times.

The improvement of last year in the methods adopted by the American Society of Civil Engineers has been very satisfactory. It would be well if this method was adopted by the various institutions in Canada. It would minimize the great variation which was found in one cement tested by the various institutions, a law of uniformity might be passed compelling all laboratories to use one and the same method thus eliminating the irregularity.

A number of crushing tests have been made of bricks, mortar, &c., for the architects, also general informations, the engineers of the department have been assisted in the best method to adopt in mixing mortar, concrete, &c., a number of contractors have been assisted in the same manner.

CONCRETE BLOCKS MADE IN THE LABORATORY.

A separate mixture of 1 part Star cement, 2 parts of Chateauguay sand, 5 parts of ½-inch stones and smaller was used for each block. The dimensions of each block are 8" x 8" x 8". They were broken at 12 months old after being treated in the following way:—

1. (A.)—KEPT in the Laboratory.

Block Number.	Salt in Water.	Made.	Crushed.	First crack.	Complete disintegration.
	%	1903.	1904.	Tons.	Tons.
1	.....	January 12.....	January 21.....	40	90
3	.....	" 13.....	" 19.....	86	89
5	.....	" 15	" 18.....	103	103
7	1	" 19.....	" 19.....	72	80
9	2	" 21.....	" 21	56	71
11	5	" 22.....	February 3.....	55	75
13	7	" 23.....	January 20.....	82	85
15	10	" 26.....	" 22.....	67	86
17	15	" 27.....	" 18.....	102	102

(B.)—MADE in the laboratory, put immediately outside for 24 hours, then removed from the moulds and kept in the laboratory till broken.

Block Number.	Salt in Water.	Made.	Crushed.	First crack.	Complete disintegration.
	%	1903.	1904.	Tons.	Tons.
2	.....	January 12.....	January 19.....	70	71
4	.....	" 13.....	" 19.....	77, 5	80
8	1	" 19	" 20.....	50	68
10	2	" 21.....	" 18	57, 5	75
12	5	" 22.....	" 18.....	78	88
14	7	" 23.....	February 3.....	75	94
16	10	" 26.....	January 20.....	61	85
18	15	" 27.....	February 3.....	72	89

2. For the following, coal ashes were used instead of stone in the same proportions:— 1, 2, 5.

(A.)—KEPT in the Laboratory.

Block Number.	Salt in Water.	Made.	Crushed.	First crack.	Complete disintegration.
	%	1903.	1904.	Tons.	Tons.
19	.....	February 6.....	February 3.....	43	50
22	1	" 11.....	" 3.....	36	68
23	2	" 11.....	" 3.....	57	65
24	3	" 13.....	January 20.....	37	69
25	5	" 13.....	" 20.....	37	64
33	7	" 19.....	" 21.....	48	54
34	10	" 19.....	" 19.....	55	65

(B.)—MADE in the Laboratory, put immediately outside for 24 hours, then taken out of the moulds and kept in the Laboratory till broken.

Block Number.	Salt in water.	Made.	Crushed.	First crack.	Complete disintegration.
	%	1903.	1904.	Tons.	Tons.
20	.....	February 6.....	February 3.....	38	53
21	.....	" 9.....	January 18.....	59	59
26	1	" 16.....	" 19.....	65	67
27	2	" 17.....	February 3.....	30	51
28	3	" 17.....	" 3.....	41	62
29	5	" 17.....	" 3.....	20	53
30	7	" 17.....	" 3.....	70	77
31	10	" 18.....	" 3.....	41	75
32	15	" 18.....	" 3.....	21	61

Blocks made in Montreal and crushed in the Cement Testing Laboratory at Ottawa.

All dimensions 8″ x 8″ x 8″. Crushed 16 months old.

Proportions : 1 Star Cement.
2 Chateauguay Sand.
3 5-½inch crushed limestone, including screenings as out of crusher.

A. (1.)—KEPT in office.

Block Number.	Made.	Crushed.	First crack.	Complete disintegration.
	1903.	1904.	Tons.	Tons.
1	January 7.....	April 7.....	6	22·5
2	" 7.....	" 7.....	6	18
3	" 7.....	" 7.....	5	25

(2.)—KEPT outside.

4	January 7.....	April 7.....	5	27
5	" 7.....	" 7.....	25	35

Proportions 2, 2, 5.

(3.)—KEPT inside.

6	January 15.....	April 15.....	38	51
7	" 15.....	" 15.....	35	57
8	" 15.....	" 15.....	26	50

(4.)—KEPT outside.

9	January 15.....	April 15.....	40	74
10	" 15.....	" 15.....	39	67

B. The ½-inch stone (same as above) was sifted on a sieve containing 23 holes to an inch and made of wire $\frac{1}{16}$ inch diameter. What was left on the sieve was used for the following samples 50 to 57.

(1.)—KEPT in office.

Block Number.	Made.	Crushed.	First crack.	Complete disintegration.
	1903.	1904.	Tons.	Tons.
50	January 23	April 23	28	33
51	" 23	" 23	30	54
52	" 23	" 23	33	58
53	" 23	" 23	32	63
	KEPT outside.			
54	January 23	April 23	22	37
55	" 23	" 23	24	44
56	" 23	" 23	22	42
57	" 23	" 23	24	45

2·5 inch crushed limestone as out of crusher.

Mixed without salt in water.

1. (A.)—KEPT in office.

Block Number.	Made.	Crushed.	First crack.	Complete disintegration.
	1903.	1904.	Tons.	Tons.
11	January 16	April 16	45	50
12	" 13	" 16	23	51
13	" 13	" 16	34	54

(2.) Mixed, put into moulds in office and put outside immediately; kept outside from January 13, 1903, till date of crushing.

14	January 13	April 13	15	46
15	" 13	" 13	15	41
16	" 13	" 13	15	23

(3). Mixed in office, put into moulds outside (20°) and remained till crushed.

14°	January 12	April 12	10	44
15°	" 12	" 12	15	40
16°	" 12	" 12	26	42

(4). Mixed in office and put immediately outside; frozen once, thawn once, then kept outside.

17°	January 12	April 12	25	46
17	" 12	" 12	24	54
18	" 12	" 12	25	36
19	" 12	" 12	20	40

(5.)—Frozen twice, thawn twice, kept outside till crushed.

Block No.	Made.	Crushed.	First Crack.	Complete disintegration.
	1903.	1904.	Tons.	Tons.
20	January 12	April 12	25	41
21	" 12	" 12	22	44
22	" 12	" 12	49	80

(6).—Frozen three times, thawn three times, then kept outside till crushed.

23	January 12	April 12	26	69
24	" 12	" 12	36	62
25	" 12	" 12	20	43

(7.)—Frozen four times, thawn four times, then kept outside till date of being crushed

26	January 16	April 16	35	59
27	" 16	" 16	40	44
28	" 16	" 16	45	48

(8).—Frozen five times, thawn five times then kept outside till crushed.

29	January 16	April 16	36	56
30	" 16	" 16	45	50
31	" 16	" 16	30	34
29°	" 21	" 21	55	64
30°	" 21	" 21	36	50

(B.) Mixed and put into moulds in the office, and kept there for fifteen hours, then put outside in order to be frozen, and inside to be thawed.

(1.) KEPT outside.

32	January 20	April 20	70	76
33	" 20	" 20	27	36
34	" 20	" 20	54	81

(2.) FROZEN once, thawn once, then kept outside.

35	January 20	April 20	44	93
36	" 20	" 20	39	82
37	" 20	" 20	50	77

(3.) FROZEN twice, thawn twice, then kept outside.

38	January 20	April 20	27	62
39	" 20	" 20	45	66
40	" 20	" 20	25	27

(4.) FROZEN three times, thawn three times, then kept outside.

41	January 21	April 21	44	61
42	" 21	" 21	30	49
43	" 21	" 21	25	69

(5.) FROZEN four times, thawn four times, then kept outside.

Block Number.	Made.	Crushed.	First crack.	Complete Disintegration.
	1903.	1904.	Tons.	Tons.
44	January 21	April 21	38	51
45	" 21	" 21	19	54
46	" 21	" 21	27	47

(6.) FROZEN five times, thawn five times, then kept outside.

47	January 21	April 21	27	50
48	" 21	" 21	25	50
49	" 21	" 21	50	76

(C.) MIXED WITH SALT AND WATER.

These blocks were mixed and put into moulds in the office, then stored immediately outside till sent to Ottawa. The moulds were taken off the day after; the material used was not frozen at the time of mixing.

PERCENTAGE OF SALT IN WATER BY WEIGHT.

Block Number.	Salt in Water.	Made.	Crushed.	First crack.	Complete disintegration.
	%	1903.	1904.	Tons.	Tons.
58	2·0	February 2	May 2	18	51
59	2·0	" 2	" 2	25	68
60	2·0	" 2	" 2	18	49
61	2·0	" 2	" 2	29	51
62	5·0	" 3	" 3	49	75
63	5·0	" 3	" 3	51	60
64	5·0	" 3	" 3	26	77
65	5·0	" 3	" 3	41	75
66	7·5	" 3	" 3	27	60
67	7·5	" 3	" 3	69	85
68	7·5	" 3	" 3	21	49
69	7·5	" 3	" 3	44	61

APPENDIX TO PART IV

REPORT

ON THE

RIVER ST. LAWRENCE SHIP CHANNEL

BETWEEN

MONTREAL AND QUEBEC

PROVINCE OF QUEBEC.

RIVER ST. LAWRENCE SHIP CHANNEL,

OTTAWA, December 14, 1904.

SIR,—According to your instructions, I beg to present the following annual report on the operations for the improvement of the River St. Lawrence Ship Channel during the fiscal year ended June 30, 1904.

Physical features.
Present navigation.
General information.
History of the work.
Present project.
Cost of Ship Channel to date.
Progress of the dredging operations at the date of writing.
Division I, opened for navigation.
Estimate, 30 foot channel, December, 1904.
Dredges.
General Notes.
Sorel Ship Yard.
Table I. Abstract of operations.
Table II. Classification of Disbursements.
Dredging plant.

I have the honour to be, sir,
Yours obediently,

F. W. COWIE,
Superintending Engineer.

EUGÈNE D. LAFLEUR, Esq., C.E.,
Acting Chief Engineer,
Department of Public Works, Ottawa.

RIVER ST. LAWRENCE SHIP CHANNEL.

PHYSICAL FEATURES.

The distance between Montreal and Quebec by the River St Lawrence ship channel is 160 miles. Of this distance about 65 per cent is natural deep water not requiring any improvement.

From Montreal to Three Rivers, 82 miles, the tide is not appreciable.

From Three Rivers to Batiscan, 20 miles, the tide can always be felt, but owing to uncertainty of time and height, it cannot be depended upon for navigation.

From Batiscan to Portneuf, 22 miles, during six hours out of every twelve, half-tide giving an additional depth of from 1½ to 4 feet, may be taken advantage of, by passing during those six hours.

From Portneuf to Quebec, 36 miles, there is a tide of from 9 to 15 feet, giving tidal navigation for about nine hours out of every twelve.

The water in the river has a very great annual fluctuation. The average height above ordinary low water is for May, 6½ ft. ; June, 4½ ft. ; July, 3¾ ft. ; August, 1¾ ft. ; September, 1 ft. ; October, ½ ft. ; November, ¾ ft.

The total fall in water level in the river at ordinary low water, between Montreal and Quebec, is about 29 feet.

From Montreal to Three Rivers, 11 ft. ; from Three Rivers to Batiscan, 3½ ft. ; from Batiscan to Portneuf, 10½ ft. ; and from Portneuf to Quebec, 4 ft.

The current varies throughout. It is strongest at St. Mary's Current in Montreal Harbour, at Cap à la Roche, and at the Richelieu Rapids. It is quite gentle in Lake St. Peter.

The general average is about 2½ miles per hour.

The River St. Lawrence between Quebec and Montreal is usually free from ice about April 10, and closed to traffic about November 25, making the season of navigation about 7½ months.

PRESENT NAVIGATION.

Navigation between Quebec and Montreal is still governed by the depth of water, as found from day to day, in the uncompleted portions of the 30 foot ship channel.

At these places there is still a depth of only 27½ feet at ordinary low water, and a minimum width of 300 feet.

In the distance between Montreal and Quebec of 160 statute miles, the length requiring dredging to give 30 feet depth at extreme low water is about 62¼ miles. In all, 42 miles has been completed to 30 feet depth and with the exception of a few miles in the straight reaches of Lake St. Peter, also widened to 450 feet. Except, therefore, in the 20¼ miles yet to be dredged, vessels now run free, at full speed and with perfect safety.

In these completed portions of the channel there is a depth of 30 feet at the extreme low water of 1897, giving nearly 4 feet greater draught for navigation than in the present channel.

The improved channel is being widened to a minimum of 450 feet, and at the bends of from 500 to 750 feet.

The completed sections are being marked with permanent range lights and gas bucys, for the safety of day navigation, and for facilitating navigation by night for

all vessels upward bound as well as light draught coal ships outward.

The division between Sorel and Montreal Harbour has been completed throughout. A vessel now, of no matter how great a tonnage that can pass Lake St. Peter, may proceed with perfect safety to her berth in Montreal. The very largest ships of the Allan and Dominion Lines have this year on several occasions, reached their dock in Montreal after 11 o'clock at night.

It is unfortunate that similar improvements as have been completed between Sorel and the eastern limit of Montreal Harbour, have not yet been made in the channel opposite Longueuil in Montreal Harbour.

During the season of 1904, the water has been exceptionally high, the lowest stage reached during the season of navigation giving a depth of 28′ 1″ in the present, or 27½ foot channel.

The average depth of water available for navigation with the greatest and least depths in each year, from May to November, since 1890, is given in the following table :—

Year.	Average depth for each month, 27½ foot channel.												From Sorel gauge, during each year (May to Nov.)			
	May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Highest.		Lowest.	
	ft.	in.	ft.	in.	ft.	in.	ft.	in.	ft.	in.	ft.	in.	ft.	in.	ft.	in.	ft.	in.
1890	35	6	35	3	31	9	30	6	30	9	29	9	30	6	37	0	29	0
1891	34	6	31	3	29	9	29	9	30	0	28	3	28	3	36	9	27	3
1892	31	0	31	9	31	6	30	6	28	9	28	3	28	3	33	6	27	3
1893	36	0	34	3	30	9	29	9	29	6	28	6	28	0	37	6	27	6
1894	34	6	31	9	31	0	29	2	28	3	28	9	29	0	36	0	27	7
1895	33	3	31	3	28	3	28	3	27	6	26	9	26	9	34	6	25	10
1896	33	6	30	6	28	9	28	0	27	6	27	9	29	0	37	0	27	4
1897	35	6	32	6	30	3	29	3	28	0	27	0	27	6	37	0	26	5
1898	31	6	30	9	29	8	28	6	28	2	28	3	28	6	32	1	26	9
1899	36	2	31	9	30	3	28	6	27	6	28	0	27	9	37	9	26	9
1900	33	6	30	9	30	6	29	6	28	1	28	9	29	2	35	9	27	4
1901	34	3	31	10	29	2	28	3	27	7	27	4	27	3	36	3	26	6
1902	33	2	32	2	32	2	29	4	28	1	28	1	29	0	34	1	27	6
1903	32	0	30	11	30	5	29	5	28	4	29	0	27	11	32	8	26	11
1904	36	3	34	5	30	9	29	5	29	5	30	4	29	3	37	4	28	1

GENERAL INFORMATION.

The whole of the ship channel between Longue Pointe, the eastern limit of Montreal Harbour, and Quebec, where dredging has been done or where required, was thoroughly tested or swept during the season of 1904.

A special twin screw steamer, with an efficient staff of engineers, was detailed for this work, and kept busy throughout the entire season.

The problem of sweeping the ship channel thoroughly is a matter of great importance and difficulty. The method of work is to suspend a heavy steel roller 40 feet long under a scow to the required depth, and to sweep along the channel against the current, running parallel lines so as to cover the whole of the ground. In tide water the depth is changing constantly. In fogs or smoky weather the work is interrupted because the shore marks cannot be seen for guidance in running the parallel lines. When there is any sea running the work naturally has to be stopped. As the work is always done in the channel, a great deal of difficulty and interruption is caused by passing vessels. The extent of the work may be inferred from the fact that where the channel is 300 feet wide, eight lines are required to be run, and where the channel is wider it takes from eleven to fifteen lines.

This work, as well as assistance in the carrying out of the dredging operations was carried on under the direction of Mr. V. W. Forneret, C.E., assisted by Mr. N. B. McLean, C.E. The members of the Shipping Federation of Canada, personally inspected the operations of the sweeping of the channel and expressed complete satisfaction at the manner and completeness with which the work was being carried on.

The semaphore at St. Jean des Chaillons was maintained in operation, as usual, from July 1 until the close of the season of navigation. This semaphore indicates the depth of water in the dredged cut at Cap à la Roche.

The semaphore at St. Nicolas was also kept in operation for the same period to indicate the depth of water, from time to time, over the undredged St. Augustin Bar.

In the River St. Lawrence ship channel proper there were during the season of navigation of 1904, only five accidents to ocean going vessels. None of these were in any way due to the channel.

Apart from these, a few minor accidents happened in the harbours of Montreal and Quebec.

The following is a list of the accidents in the ship channel :—

'Bonavista'—Port St. Francis...	At anchor. Struck by passing dredge being towed. Slight damage.
'Cape Breton'—'Canada'—Sorel anchorage..	Collision. Slight damage to 'Cape Breton.' 'Canada,' a passenger river steamer, sunk, with loss of life.
'Vancouver'—Lake St. Peter..	Took sheer and grounded in soft mud outside of channel. Floated after great difficulty by dredging.
'Turret Chief'—Portneuf..	Grounded at night while drawing only 9 feet, outside of channel. Pilot admitted defective eyesight.
'Louisburg'—Champlain..	Grounded outside channel on sand bank. No damage.

During the season of 1904 the total number of ocean going vessels passing up and down the channel was 796, or six less than during the previous season.

The total tonnage for the season amounted to 1,856,697 tons, a decrease from last year of 1¾ per cent.

A feature of the business on the St. Lawrence for 1904, was the large coal traffic between the Nova Scotia mines and Montreal. In all, this trade amounted to 1,401,611 tons, or an average of nearly two steamers per day for every day in the season.

HISTORY OF THE WORK.

Before the commencement of any dredging operations, the depth on the flats of Lake St. Peter was about 11 feet at the ordinary autumn low water of that time.

The actual improvements were commenced in 1844, and continued by the government as a public work until 1846 and abandoned the following year owing to the opposition to the location of the channel.

Legislation was passed in 1850 transferring the plant and authorizing the Montreal Harbour Commissioners to borrow money and proceed with the works as they should deem best.

From 1851 to 1888 all operations for the improvement of the St. Lawrence between Montreal and Quebec, were carried on by the Montreal Harbour Commissioners, the interest on the cost of the work being defrayed by a tonnage tax on all vessels drawing 10 feet and upwards.

In 1888 the channel from Montreal to Cap à la Roche was completed to 27½ feet at ordinary low water, and from there to Quebec 27½ feet at half tide.

The government decided in 1888 to re-adopt the River St. Lawrence ship channel as a public work.

Under the Public Works Department, from 1888 until 1898 the work begun by the Harbour Commissioners was continued.

The difficult rock work at Cap à la Roche and Cap Charles, was completed as designed.

Almost all of the dredged portions of the river, except the channel in Lake St. Peter, were cleaned up or deepened, and many curves and narrow places were widened.

Surveys were made, and between Cap Charles and Quebec, to avoid the necessity of waiting for the tide, channels were dredged through several shoals.

The extraordinary low water of 1895 and 1897, and the increase in the size of vessels, urgently called for a wider and deeper channel.

In 1897 it was decided to construct new plant consisting of large and powerful dredges, tugs, barges, &c., suitable for channel improvement on a large scale.

PRESENT PROJECT.

In 1899 the dredging plant was in a position to warrant the commencement of a more extensive plan of operations; and as two new dredges of a large type, with tugs and plant had proved their efficiency, two powerful steel dredges designed according to the best practice and experience in this identical work, with tugs, &c., were almost completed and two more, to complete the six required, were authorized.

With a proper dredging fleet assured, and the necessary shops and ship yard at Sorel available, the work of the 30-foot channel was undertaken.

The low water of 1897, the lowest on record, except the short period of extraordinary low water of 1895, was adopted as the plane of river level at which the channel would be made 30 feet in depth.

It was also decided to make the channel as wide as could be dredged in one cut, viz., 450 feet.

The present object of the dredging operations is to obtain in the shortest possible time a ship channel between Montreal and Quebec for safe 30-foot navigation.

The minimum width for the tangents has been fixed at 450 feet, but the bends are widened out to from 500 to even 750 feet. The dredging is being done to give a clear depth of 30 feet at the E.L.W. of 1897.

The navigable depth in this channel as being dredged, during the season of 1904, was as follows :—

May.	June.	July.	Aug.	Sept.	Oct.	Nov.
39′ 11″	38′ 1″	34′ 5″	33′ 1″	33′ 1″	34′ 0″	32′ 11″

The greatest depth from May to November was 41′ 0″ and the least, at the end of November, 31′ 9″.

The total distance between Montreal and Quebec is 160 miles. The length requiring dredging between Longue Pointe, the eastern limit of Montreal Harbour, and Quebec Harbour, is about 62½ miles.

COST OF SHIP CHANNEL TO DATE.

TABLE showing the Total Cost of the Dredging and Plant, and the Quantities Dredged up to June 30, 1904.

	Cost of Dredging.	Expenditure for plant, shops, surveys, &c.	Quantities dredged.
Montreal Harbour Commissioners—1851 to 1888.	$ cts.	$ cts.	Cubic yards.
Dredging Montreal to Cap à la Roche to 27½ feet at ordinary low water, and from Cap à la Roche to Quebec to 27½ feet at half tide	3,402,494 35	534,809 65	19,865,693
Department of Public Works.			
Dredging consisting of widening and cleaning up of channel; deepening Cap à la Roche to Cap Charles to 27½ feet at ordinary low water and dredging at Grondines, Lotbinière, and Ste. Croix—1889 to June 30, 1899	829,583 08	486,971 79	3,558,733
Present Project:—Dredging channel between Montreal and Quebec to 30 feet at lowest water of 1897; also widening to a minimum width of 450 feet and straightening—			
Fiscal year 1899-1900	100,191 01	265,270 78	1,107,894
" 1900-01	136,680 83	287,040 04	2,479,385
" 1901-02	185,429 80	479,731 47	3,098,350
" 1902-03	255,776 55	277,703 50	6,544,605
" 1903-04	276,958 59	308,765 44	4,619,260
	5,187,114 21	2,640,292 67	41,273,920

PROGRESS of the Dredging Operations at the date of writing, the close of the season of 1904.

Locality.	Total Length Requiring Dredging.	Length Dredged in 1904.	Total Length of 30 Feet Channel Dredged.	Length yet to be Dredged.
	Miles.	Miles.	Miles.	Miles.
Division 1:— Montreal Harbour to Sorel	21·80		21·80	
Division 2:— Sorel to Bastican	12·45	3·10	8·00	4·45
Division 3:— Lake St. Peter	18·00	1·80	*7·70 ‡3·60	6·70
Division 4:— Bastican to Quebec	10·00		0·90	9·10
	62·25	4·90	42·00	20·25

* Not widened. ‡ Widened.

From Batiscan to Quebec the tide is available, and by taking advantage of it, vessels of heavier draught may pass.

During the summer of 1903 the practical completion of Division I. was announced. This gives a channel between Sorel anchorage and Longue Pointe, the eastern limit of Montreal Harbour, of a depth of 30 feet at the extreme low water level reached in 1897, and having a minimum width of 450 feet.

In the 40 miles of navigation between these two points there are now but sixteen tangents, joined by easy curves where the channel is widened to from 500 to 750 feet.

DIVISION I. OPENED FOR NAVIGATION.

In the month of October, 1903, the dredging in Division I. having been practically completed, and the work thoroughly tested, it remained for the Department of Marine and Fisheries to give the necessary aids to navigation so as to make the improved highway fully available.

In anticipation, this department had early in the season reported on the position and character of the lighthouses that would be required to permanently mark the channel as soon as completed.

On November 1 the lighthouses were put in operation, and gas buoys were placed to mark the bends and narrow places.

The benefit to navigation was immediately apparent. In the month of November, when time was of great value, several large ships, instead of anchoring at Sorel, took advantage of the improved and well marked channel and proceeded to Montreal safely making their docks before midnight.

It is not expected that the large transatlantic ships outward bound will sail from Montreal during the night. The time for sailing for these large vessels is usually fixed in advance. Coal ships, however, and other vessels of light draught, will be able to sail from Montreal in clear weather at any time when they are ready. Inward bound ships will be able to avail themselves of the improvements throughout the channel as soon as completed.

The utility of the work done on the River St. Lawrence is evident. Advantage of every improvement is immediately taken, and at the present time several very large ships are being built with a view to the expected increased accomodation.

ESTIMATE, 30 Foot Channel, December, 1904.—Montreal Harbour to Quebec.

Locality.	Length of Dredging.		Cubic yards yet required to be done.
	Required.	Done.	
	Miles.	Miles.	
Division 1 :—			
Longue Pte. to Pte. aux Trembles (en haut)		5·05	
Ile Ste. Thérèse		0·40	
Varennes to Cap St. Michel		3·00	
Cap St. Michel to Verchères		4·50	
Verchères Traverse		1·10	
Verchères to Contrecœur		1·70	
Contrecœur Channel		6·05	
Total		21·80	

ESTIMATE, 30 Foot Channel, December, 1904—Montreal Harbour to Quebec—*Concluded.*

Locality.	Length of Dredging.		Cubic yards yet required to be done.
	Required.	Done.	
	Miles.	Miles.	
Division 2:—			
Sorel to Ile de Grace	0·80	3·60	350,000
Stone Island		1·10	
Ile au Raisin	0·25		40,000
Lake St. Peter (see 3)			
Port St. Francis	0·15	0·35	70,000
Three Rivers		0·50	
Cap Madeleine to Becancour	1·55		620,000
Becancour to Champlain	0·50	1·75	200,000
Champlain to Pte. Citrouille	0·60	0·70	400,000
Batture Perron	0·60		450,000
Total	4·45	8·00	2,130,000
Division 3:—			
Lake St. Peter	6·70	*7·70 †3·60	13,000,000
Total	6·70	11·30	13,000,000
Division 4:—			
Batiscan to Cap Levraut	3·00		1,300,000
Cap à la Roche Channel	2·00		1,200,000
Pouillier Rayer	1·20		500,000
Cap Charles	0·90		500,000
Grondines	0·80		200,000
Lotbinière		0·40	
Cap Santé		0·20	
Ste. Croix	0·60	0·30	150,000
St. Augustin	0·60		150,000
Total	9·10	0·90	4,000,000
Totals	20·25	42·00	19,130,000

*Not widened. †Widened.

DREDGES.

Laval.—Of the fleet of ship channel dredges, this is the oldest. The hull is of wood, constructed in Ottawa in 1894. The buckets are made of cast steel for work in rock and other hard material.

During the winter 1903-04, the above water parts of the hull, the timbers and 'A' frames were rebuilt at the government ship yard at Sorel.

The details of the operations of this dredge for the fiscal year were as follows :—

On July 1, 1903, the *Laval* was engaged in cleaning up the slight filling in of sand, which occurs only at Champlain. This was completed on July 3.

The dredge was then taken to Pointe aux Trembles (en haut) to work on the Longue Pointe curve. The material, a mixture of black sand and stiff clay with embedded stones, was very difficult and on November 20, the dredge was completely used up and had to be taken to winter quarters for a thorough overhaul.

Owing to the extent of the repairs, and the rebuilding, the *Laval* was not ready in 1904, until June 8, when she was taken to work at the widening and straightening of the channel between Becancour and Ile Bigot, where she continued until the end of the fiscal year.

Considering the difficult material, and the state of the machinery, the *Laval* made satisfactory progress. In the total of 141 days, during which this dredge was at work, her machinery was in actual operation 67 per cent of the full working time.

The total quantity dredged amounted to 217,150 cubic yards, at a cost of $32,615.17 or $15\frac{01}{100}$ cents per yard.

Laurier.—The hull of this dredge is also of wood, having been constructed at the government works at Sorel, in 1897. Her buckets were of large size built up from cast steel bottoms, for working in soft material. As almost all the work in soft material was completed, the buckets were changed during the winter of 1903-04, and replaced by smaller and stronger buckets, having sufficient teeth for working in hard-pan, &c.

From July 1903, until September 24, the *Laurier* worked near Pointe aux Trembles (en haut) on the Longue Pointe traverse and curve. The material was sticky black sand mixed with clay and gravel, and very tough.

From September 24, until the end of the season, the work was at the channel between Sorel and Ile de Grâce, where the material was soft clay, the vessel going into winter quarters on November 26.

In 1904, the *Laurier* with a complete set of new buckets went into commission on April 28. Her first work was some cleaning up at Cap St. Michel, and Pointe aux Trembles (en haut), and on May 24 she was taken to Port St. Francis where she worked at Force Shoal, in hard clay, stones, and embedded boulders, until the end of the fiscal year.

The number of days during which this dredge was in operation was 180, including the bad weather periods, and the percentage of time at actual work, 57 per cent.

During the fiscal year the dredge removed 317,950 cubic yards at a total cost of $35,883.24 or $11\frac{28}{100}$ cents per yard.

Lady Aberdeen.—The hull of this dredge is of steel, the vessel complete, having been constructed at the Sorel works in 1900. The buckets were originally designed for working in soft material, and during the winter 1903-04, they were replaced by a complete new set of cast-steel buckets especially designed for working in rock or other hard material.

At the commencement of the fiscal year, this dredge was working at Contrecœur, in soft clay, continuing until its completion on September 8. The dredge then worked on the channel between Sorel and Ile de Grace, also in soft clay, until the close of the season, November 26.

In 1904, after leaving winter quarters on May 3, the *Lady Aberdeen* worked for a few days on the Pointe aux Trembles channel, near Longue Point . After the completion of this work on May 24, the dredge was taken to Port St. Francis, where she continued working in the very hard material found at Iron Shoal, until the end of the fiscal year.

During the year, this dredge was at work for 176 days, with the machinery in actual operation for 68 per cent of the full working time.

The total number of cubic yards removed amounted to 649,400 at a cost of $35,827.24 or $5\frac{51}{100}$ cents per yard.

Lady Minto.—This dredge is of exactly the same type and design as the *Lady Aberdeen.* Until the close of the season of 1903, her buckets were for working in soft material. During the winter these were replaced by a complete new set of cast-steel buckets for working in rock and the hard material now found, below Lake St. Peter.

From the beginning of the fiscal year until September 3, this dredge worked at Contrecœur, the material removed being soft clay and stones. From September 3, until November 7, the work was at Port St. Francis, on the difficult dredging of Force Shoal, where in addition to the hard character of the work, and the exposed position, a great deal of time was lost while large boulders were being lifted by a stone lifter.

The remainder of the season, until the dredge went into winter quarters on November 24, was spent on the Pointe aux Trembles (en haut) channel.

On the opening of the season of 1904, this dredge was taken to St. Denis and River Saguenay where she was still working at the close of the fiscal year.

As the dredge only worked on the ship channel during the first half of the fiscal year, the working time amounted to 124 days, during which period the dredge was actually working 54 per cent of the full time.

The quantity dredged amounted to 306,340 cubic yards, and the cost amounted to $37,002.17, or $12\frac{07}{100}$ cents per yard.

Lafontaine.—This vessel is probably the best dredger of her type in the world. The hull is of wood, the work of the Sorel ship yard, and completed in 1901. With large but very strong buckets, she again holds the record of the elevator fleet, for the number of yards removed during the fiscal year, being again under the charge of Captain Albert Marcotte and engineer Johnny Matte.

From the commencement of the fiscal year until September 12, the *Lafontaine* worked at Contrecœur in compact blue clay. She then worked at the foot of Lake St. Peter on Nicolet Traverse until October 28, and from that date until November 25, when she went into winter quarters, she worked at cleaning up some imperfect banks and lumps found by testing.

On the opening of the season of 1904, this dredge commenced operations on April 28, between Vercheres and Cap St. Michel, widening the channel during high water. On completing this work on May 19, she was taken back to the work at Nicolet Traverse continuing until the close of the fiscal year.

The working time of the *Lafontaine* was 178 days, the dredge being in actual operation 57 per cent of the full working time.

The total number of cubic yards removed amounted to 752,400, at a total cost of $36,143.92, or $4\frac{81}{100}$ cents per yard.

Baldwin.—This is the newest vessel of the elevator dredge fleet. The hull is of wood, constructed at the Sorel shipyard in 1902.

From the commencement of the fiscal year until November 4, the *Baldwin* worked at Pointe aux Trembles (en haut) in exceedingly tough and difficult material consisting of cemented black sand with embedded stones. Early in November the dredge was completely used up, and she was taken to Sorel for a thorough repair.

During the winter the buckets were rebuilt and strengthened, and the dredge was only ready for operations in 1904 on May 28.

Work commenced at Becancour, also, in very hard material consisting of hardpan and embedded boulders, and continued until the end of the fiscal year.

This dredge under the charge of Captain Louis Dauphinais, and engineer F. Beaulac worked very steadily for the time at work, and considering the character of the material. Owing to the heavy repairs in the spring and autumn, the year was short, the working time being only 136 days, during which period the dredge actually worked 75 per cent of the full time.

The total number of cubic yards dredged amounted to 320,880 at a cost of $36,959.23, or $11\frac{51}{100}$ cents per yard.

J. Israel Tarte.—This hydraulic dredge is the newest machine of the ship channel dredging fleet, and a new departure as regards plant for the improvement of navigation in Canada. Constructed by the Polson Iron Works Company, of Toronto, Canada, and designed under the supervision of the Chief Engineer and Superintendent of Dredging for the Public Works Department, by Mr. A. W. Robinson, M. E., of Montreal, the features and results of this dredge are of wide-spread interest.

The hull is of steel, of the same type and general design as the steel hulls of the elevator dredges.

The vessel is not self-propelling. She is moved and attended by tugs. The operations of dredging and methods of manoeuvering are precisely the same as those of the

elevator fleet. The vessel is held in position and moved for feeding by six anchors, one forward, one aft, and two on each side. The cut or furrow is taken, commencing at one side of the channel, and by the side winches hauling the dredge across to the other side, then advancing 2 to 6 feet according to the material, recrossing. Any ridges that may be left between cuts or furrows, are narrow. They cannot be found by the lead and in the soft material would not inconvenience a vessel in any way. The current also tends to level the dredged bottom.

The bow anchor is attached to a wire cable at least half a mile long, as in moving it, the dredge has to be stopped.

Work commences at midnight, Sunday, and if nothing happens continues until 6 o'clock p.m., on Saturday.

On account of the difficulty in making an absolute clean cut, at least two feet, usually more, is allowed, in order to assure safety from the ridges.

The quantities are calculated by taking winter soundings, and by obtaining the depth after dredging by the testing scow, and the advance from instrumental positions. The cubic quantities *in situ*, are increased 25 per cent to give results as scow measurement, on which basis all other work is calculated.

The material is discharged through a 36 inch pipe, floated on steel pontoons. This discharge pipe is connected by a swivel-elbow with the dredge, and the discharged end is moored to a steam scow held by two anchors. The curve of the pipe and the swing of the steam scow, allows for the motion of the dredge across the 450 foot channel. The discharge pipe is about 2,000 feet long, and the material is deposited as nearly as possible 1,500 feet from the edge of the channel, and on the side where the current will tend to carry the suspended matter further away.

Two tugs are generally required, one with a day crew, and the other for both day and night

The material in the bottom is first attacked by a revolving cutter on the end of the suction pipe. This cutter is driven by an independent engine. It not only cuts the material but starts it towards the inlet, and although the suction pipe is 80 feet long, heavy material, small stones, buoy anchors, &c., are sucked up with regularity.

The power for the main pump is derived from a triple expansion marine engine.

The boilers, of which four were originally put in, were of the locomotive type. From the commencement of the work, difficulty was had with the boilers. Finally in November, 1903, one of them exploded resulting in loss of life, and disabling the dredge for nearly eleven months. Four new marine boilers were put in, and have proved their efficiency and capacity.

Throughout the dredge, machinery and discharge connections, extensive alterations have to be made, and the vessel as she now stands is greatly changed from the plant which originally started work. It is now hoped that good steady work may be accomplished, and new records made.

During the month of September, 1903, dredge *J. Israel Tarte* easily made the world's record for one month's dredging. In 25 working days the dredge was in actual operation 83 per cent of the full working time of 132 hours per week, and removed 750,100 cubic yards scow measurement. These results were calculated from actual measured cross sections, and by adding to the quantity *in situ*, 25 per cent, to make scow measurement. This made over 30,000 cubic yards per working day or 1,650 yards per hour of actual work.

The dredge *J. Israel Tarte* was disabled on November 3, 1903, by a disastrous accident to one of her boilers.

The wages for the officers and crews of the dredge and attending plant, including board, amounts to about $3,000 per month. This includes the salary of a mechanical engineer.

The cost of the steam coal (bituminous) delivered on board the dredge is about $4 per ton of 2,000 lbs.

A dredge of the *Tarte* type gives extraordinary results if her machinery can be kept going. Except for breakdowns the delays are very few.

The dredging machinery proper, the cutter, and the hydraulic machinery have proved themselves to be wonderfully well adapted both in design and construction for the work.

We have learned by experience that for hull, main engines, steam piping, and boilers, English practice of reserved strength and power, to avoid forcing to the utmost, is necessary to avoid breakdowns.

During the fiscal year the *J. Israel Tarte* worked only from July 1, to November 3, the dredge being disabled for the remainder of the working season. In the 106 days, the dredge was in actual operation for 69 per cent of the full working time.

The total number of cubic yards removed amounted to 2,055,140 at a cost of $62,527.62, or an average of $3\frac{4}{100}$ cents per yard.

General Notes.

The plant available consisted of six elevator dredges, one hydraulic dredge, six tugs, and two staff and sweeping steamers. There was also a stone lifter, three coal barges, and the necessary hopper scows, boarding scows, which scows and the testing scow.

The constant heavy work day and night is very hard on the machinery, and all the dredges were stopped from time to time, for shafts worn out, tumblers broken and especially for buckets broken.

The hopper scows also caused more delay and trouble than usual owing to wear and tear caused by the heavy material and heavy work.

The elevator dredges ordinarily work from 12 a.m. Monday until 6 p.m. Saturday, 20 hours per day, or 115 hours per week.

Two full crews work in ten hour shifts, changing at noon and at midnight. Day and night work is not as economical as day work only, especially in dredging, as coaling and repairs stop the work.

In making up the cost of the work of dredging everything is included, except interest on the capital expenditure and depreciation. The principal items of cost are, wages, fuel, board, stores, repairs, superintendence and engineering expenses. The item of repairs includes keeping the plant in constant good repair. The cost of operating an elevator dredge with its attendant plant amounts to about $32,000 per annum. The cost of operating the hydraulic dredge will amount to about $60,000 per annum.

The total cost of the dredging operations on the ship channel for the fiscal year was $276,958.59, and the total number of cubic yards dredged 4,619,260, making the cost per yard $5\frac{89}{100}$ cents.

By Order in Council of March 11, 1904, on a report from the Right Honourable the President of the Privy Council, with a view to systematizing and facilitating the work: the hydrographic surveys, the management and control of the river St. Lawrence ship channel together with the dredging and ship-building plant, were transferred at the close of the fiscal year to the Department of Marine and Fisheries, so as to place the supervision of the improvements to navigation on the St. Lawrence route under the department directly responsible for the Pilotage and Aids to Navigation.

The following tables show in a concise form the details of the operations of the different dredges, the classification of the expenditure, the cost per yard in each locality, and the expenditure at Sorel in connection with new plant and the shipyard generally.

SOREL SHIP YARD.

The following are the chief items of work done at the Sorel Ship Yard during the fiscal year as reported by Mr. G. J. Desbarats, Director of Ship Yard.

New Construction.

The new construction underway during the year was as follows:—

Dredge *W. S. Fielding.*—The construction of this dredge was advanced during the year. The plating of the deck was finished; the inside partitions were placed, main engines, shafting and propeller were installed and the woodwork was begun.

The vessel was launched successfully on April 14 1904.

The pump engines for this dredge which were ordered by the department from the Polson Iron Works were not delivered during this year, so the engine installation could not be completed.

The hydraulic apparatus for operating the gates, was built and put in place.

Dredge Progress.—This spoon dredge which was begun in the previous year, was finished in the summer of 1903. Supplementary apparatus was added to fit this dredge for salt water work. After working during the summer of 1903, the dredge was brought to Sorel and some slight alterations were made to the machinery, and it is understood that she is now giving every satisfaction.

Tug Montcalm.—This is a twin screw wooden tug 82 feet by eleven feet six inches by nine feet. The hull which had been begun in the spring of 1903, was finished in this fiscal year. The boiler was built at Sorel and placed in the vessel. The old engines of the tug *John Pratt* were rebuilt and used for this tug. This tug was ready for operating in the spring of 1904, and has been working satisfactorily since.

Dredge International.—This dredge, which was bought by the department in the summer of 1903, was brought to Sorel the following winter and was overhauled and many changes made to the machinery and outfitting. The dredge was equipped with new spuds and a new arm for dredging in 60 feet of water, and the crane and the front part of the dredge was strengthened to enable her to do this work. The crew quarters were rebuilt and enlarged and all the machinery was overhauled and repaired.

Scows for Dredge Progress.—Two dump scows of a capacity of 200 cubic yards each were built for the use of the dredge *Progress.* These scows were built of Douglass fir and equipped with a new set of opening gear for the gates, which was designed at the Sorel ship yard. It is understood that these scows are giving every satisfaction.

Stone Lifter No. 3.—Machinery for this stone lifter was designed and built during this year. The hull was finished, the machinery placed and the boat was ready for work in the beginning of the summer of 1904.

Coal Barge No. 4.—A small amount of work was done on this barge in the previous year. The hull was completed in this fiscal year. The boat was equipped with boiler, steam winch and necessary outfit and was ready for operation in the spring of 1904.

Dredge J. Israel Tarte.—One of the boilers of this dredge having exploded in the fall of 1902, it was decided to equip it with four new boilers.

The upper works of the dredge had to be completely changed to accommodate these boilers. This work was carried out at Sorel during the winter.

The boilers were ordered from the Bertram Engine Works Company, Messrs. John Inglis & Son, of Toronto, and were to be delivered on May 1. They were only delivered in the latter part of the summer, so that the dredge was not ready for work in the spring of 1904. The machinery of the dredge was overhauled and put in good order.

Hopper Scows.—Two new hopper scows, of a capacity of 250 yards each, intended for use on the St. Lawrence ship channel, were begun in the spring of 1904. The timber for these scows was received, but very little work was done before June 30.

New Buckets.—Two new sets of Rock buckets were supplied for the dredges *Lady Minto* and *Lady Aberdeen*. These dredges were equipped before with buckets for soft material. A complete outfit was provided, consisting of buckets, manganese pins and bushes and upper and lower tumblers. The necessary alterations were made to the dredges to install these buckets and tumblers.

The dredge *Laurier* was also equipped with a new set of buckets of a heavier pattern than those she had been using before.

Dredge Laval.—The hull of this dredge was rebuilt from the water line up on account of defects which had developed in the old timber. The hull was strengthened by the addition of steel girders. Additional quarters were provided for the crew and practically the whole of the upper works were rebuilt.

Hoisting Winch.—An electrical hoisting winch was installed in connection with the shear legs at the ship yard. This new winch enables us to lift a load of fifty tons.

Maintenance of Fleet.—The usual repairs were effected on the different vessels of the St. Lawrence ship channel, and the machinery was kept in good order during the working season. Repairs also were made to the dredges *Nithsdale* and *St. Louis* and a certain amount of work was done for the St. Maurice dredging fleet. The buildings in the ship yard were painted and the machinery was kept in proper repair during the year.

PUBLIC WORKS OF CANADA.

River St. Lawrence Ship Channel.

Abstract of work of Dredging Fleet during fiscal year ended June 30, 1904.

Dredge.	Locality of Dredging.	Time of Service.	Nominal Working Time 10 hrs. per Day.	Hours Actual Dredging.	Number of Scows filled.	Number of Cubic yards Dredged, scow Measurement.	Depth of Dredging at low water of 1897.	Width.	Character of Soil.	Remarks.
		Days.	Hours.				Ft. In.	Feet.		
'Lady Aberdeen'	Contrecœur—									
	St. Ours Traverse	26	500	346	633	126,600	30 0	450	Clay and stones	Capt. N. Dauphinais.
	Bellmouth Curve	32	610	443½	846	169,200	30 0	450	Blue clay	
	Sorel to Ile de Grace	68	1,305	838½	1,428	285,600	30 0	450	Soft clay and sand	
	Pointe aux Trembles (en haut)	18	345	239½	90	18,000	30 0	500	Clay sand and stones	
	Port St. Francis	32	615	432¼	250	50,000	30 0	350	Clay and stones	
		176	3,375	2,299½	3,247	649,400				
'Lady Minto'	Contrecœur Traverse	55	1,055	780½	1,206½	241,050	30 0	450	Blue clay and stones	Capt. R. Matte.
	Port St. Francis	55	1,050	371¼	268¼	53,650	30 0	500	Clay sand and boulder	
	Pointe aux Trembles (en haut)	14	270	141½	54¼	11,640	30 0	450	Clay and stones	
		124	2,375	1,293	1,527¾	306,340				
'Laurier'	Pointe aux Trembles (en haut)	82	1,570	981	394	78,800	30 0	450	Clay and stones	Capt. C. Gendron.
	Sorel to Ile de Grace	54	1,035	553½	894	206,550	30 0	450	Soft clay and sand	
	Vercheres to Cap St. Michel	12	230	120½	32	6,400	30 0	450	Clay and stones	
	Port St. Francis	32	615	298¼	131	26,200	30 0	500	"	
		180	3,450	1,953¼	1,451	317,950				
'Laval'	Champlain	3	55	23½	21	3,150	27 6	300	Sand	Capt. B. Ladebauche
	Pointe aux Trembles (en haut)	118	2,265	1,497½	1,237	184,750	30 0	450	Clay and stones	
	Becancour to Champlain	20	385	285½	195	29,250	30 0	450	"	
		141	2,705	1,806½	1,453	217,150				

'Lafontaine'	Contrecœur—									
	Bellmouth Curve	13	250	150⅔	287	86,100	30 0	450	Blue clay	Capt A. Marcotte.
	Contrecœur Course	49	935	617⅔	828½	248,550	30 0	450	"	
	Petit Traverse	15	285	184⅓	300	90,000	30 0	450	"	
	Contrecœur Traverse	4	80	47⅔	33	9,900	30 0	450	Blue clay and stones.	
	Lake St. Peter, Nicolet Traverse	74	1,420	656	649	194,700	30 0	350	" "	
	Vercheres to Contrecœur	4	75	43	27	8,100	30 0	450	Hard clay	
	Vercheres to Cap St. Michel	19	365	252	383½	115,050	30 0	450	Clay and stones	
		178	3,410	1,951	2,508	752,400				
'Baldwin'	Pointe aux Trembles (en haut)	107	2,050	1,528½	922	271,080	30 0	450	Clay and stones	Capt. L. Dauphinais
	Becancour	29	555	418⅔	166	49,800	30 0	450	"	
		136	2,605	1,947	1,088	320,880				
'J. Israel Tarte'	Lake St. Peter	106	2,328	1,598	.....	2,055,140	30 0	450	Soft blue clay	L. A. Desy, M.E.
						4,619,260				

DREDGING SHIP CHANNEL, River St. Lawrence between Montreal and

Vessels.	Fuel.	Wages.	Board.	Stores and materials.	Repairs. — Labour.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Dredge 'Lady Aberdeen'	4,729 00	6,913 17	2,251 60	1,160 81	3,516 20
Tug 'Cartier'	1,788 25	3,613 12	1,496 00	309 83	1,391 81
Dredge 'Lady Minto'	3,707 00	6,651 24	2,082 26	1,048 73	5,028 58
Tug 'St. Jean Iberville	2,661 00	3,720 90	1,527 62	383 65	1,436 74
Dredge 'Laurier'	4,851 25	6,642 17	2,562 77	997 24	6,120 72
Tug 'St. Francis'	1,608 00	2,515 73	917 18	257 20	750 50
Dredge 'Laval'	4,696 25	5,971 65	2,136 27	986 27	3,973 01
Tug 'Jesse Hume'	1,580 00	2,805 28	948 42	266 86	863 71
Dredge 'Lafontaine'	5,310 25	6,574 28	2,649 74	1,276 70	5,281 63
Tug 'Emilia'	1,629 00	2,604 79	986 24	520 27	627 57
Dredge 'Baldwin'	4,267 00	5,842 58	1,909 61	618 54	8,400 13
Tug 'Champlain'	1,585 25	3,247 06	1,261 04	256 67	818 90
Dredge 'J. Israël Tarte'	16,071 60	10,209 97	2,617 95	1,826 48	3,709 74
Tug 'Lac St. Pierre'	3,255 25	3,683 89	1,549 49	745 28	997 71
" 'Montcalm'	474 00	815 54	261 82	118 55	56 22
Stone Lifter 'No. 2' (Divided equally	180 75	516 89	127 70	63 67	411 80
" 'No. 3' bet. elev. dredgs)	45 50			64 14	3 60
Str. 'Frontenac' (Div. ⅛ to each	3,133 53	4,222 93	2,203 25	1,631 71	1,549 62
" 'Eureka' elev. dredge	2,621 40	3,087 43	1,485 22	1,751 65	7,775 02
" 'Jas. Howden' and ⅞ hydrau-	2,554 00	3,141 83	1,968 17	1,615 98	1,031 43
Tug 'Monitor' lic dredge.	393 00	193 00	146 60	405 80	1,843 22
" 'Carmelia'	62 52	28 00	6 00	289 84	479 10
Hydraulic Survey					
Str. 'De Levis'	1,596 50	2,968 96	350 75	1,066 10	768 94
Dredge 'Progress'	126 25		32 12	672 59	43 16
" 'No. 6'	110 00	3,069 31	35 08	143 21	1,274 05
Expenditure for Plant					
Shops, Stores on hand, &c					
Str. 'James Howden' (No. 8)					
Tug 'Montcalm' (No. 9)					
Stone Lifter 'No. 3'					
Coal Barge 'No. 4'					
New Scows Nos. 14 and 15					
New Buildings					
Ship Yard Railway					
New sets of buckets					
Dredge 'Laval' New Hull					
" 'J. I. Tarte' Boilers, &c					
Electric hoisting gear					
New tools and machinery					
Coal on hand					
Stores and materials					
Resumé.					
Cost of dredging					
Expenditure for plant					
Shops, Surveys, &c					
Totals	69,036 53	89,039 22	31,512 90	18,417 77	58,153 11

Quebec, Classification of Disbursements for Fiscal Year ended June 30, 1904.

General Expenditure New Plant, Rebuilding, Ship Yard, &c.	Proportion of General and Office Expenses, &c.	Expenditure for Each Vessel.	Stone lifter Service. Elevator Dredges	Tug Service.	Inspecti'n, Towing, Sweeping, &c.	Hydrographic Survey including Str. 'De Levis'.	Total Cost of Operations of each dredge and plant, during fiscal Year.	Total Expenditure on Ship Channel Appropriations.
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
	1,632 00	20,252 78	256 92	9,379 01	5,938 53		35,827 24	
	780 00	9,379 01						
	1,677 00	20,194 81	256 92	10,611 91	5,938 53		37,002 17	
	882 00	10,611 91						
	1,917 00	23,091 15	256 95	6,596 61	5,938 53		35,883 24	
	548 00	6,596 61						
	1,606 00	19,369 45	256 92	7,050 27	5,938 53		32,615 17	
	586 00	7,050 27						
	1,912 00	23,004 60	256 92	6,943 87	5,938 53		36,143 92	
	576 00	6,943 87						
	1,908 00	22,945 86	256 92	7,817 92	5,938 53		36,959 23	
	649 00	7,817 92						
	3,174 08	37,609 82		13,040 75	11,877 05		62,527 62	
	927 00	11,158 62						
	156 00	1,882 13						
	117 00	1,417 31						
	11 00	124 24						
	1,155 00	13,896 04						
	1,515 00	18,235 72						
	934 00	11,245 41						
	271 00	3,252 62						
	73 00	878 44						
						28,692 49		
	612 00	7,363 25				7,363 25		
	79 00	953 12						
	421 00	5,052 65						
589 12								
9,373 84								
9,140 94								
14,641 35								
16,587 78								
176 94								
1,220 22								
60,470 90								
20,350 38								
50,518 66								
4,981 86								
6,281 26								
15,996 41								
56,375 27								
								276,958 59
								308,765 44
286,703 93	24,168 08	290,327 61	1,541 55	61,440 34	47,508 23	36,055 74	276,958 59	585,724 03

DREDGING SHIP CHANNEL, River St. Lawrence between Montreal

DETAILS OF DREDGING, LOCALITY

Dredges.	Total Cost of Operations of each dredge and plant, during Fiscal Year.	Number of days in Operation, each Dredge.	Cost per Day. Operations of Dredge and plant.	Days Working each Locality.	Cost of Work each Locality.	Total Cost of Operations of each Dredge.
	$ cts.		$ cts.		$ cts.	$ cts.
Dredge 'Lady Aberdeen'	35,827 24	176	203 56	26	5,292 66	
" "				32	6,514 04	
" "				68	13,842 38	
" "				18	3,664 18	
" "				32	6,513 98	
" "						35,827 24
Dredge 'Lady Minto'	37,002 17	124	298 40	55	16,412 24	
" "				55	16,412 24	
" "				14	4,177 69	
" "						37,002 17
Dredge 'Laurier'	35,883 24	180	199 35	82	16,346 80	
" "				54	10,764 97	
" "				12	2,392 23	
" "				32	6,379 24	
" "						35,883 24
Dredge 'Laval'	32,615 17	141	231 31	3	693 96	
" "				118	27,294 94	
" "				20	4,626 27	
" "						32,615 17
Dredge 'Lafontaine'	36,143 92	178	203 05	13	2,639 74	
" "				49	9,949 72	
" "				15	3,045 85	
" "				4	812 24	
" "				74	15,026 08	
" "				4	812 23	
" "				19	3,858 06	
" "						36,143 92
Dredge 'Baldwin'	36,959 23	136	271 75	107	29,078 21	
" "				29	7,881 02	
" "						36,959 23
Dredge 'J. Israël Tarte'	62,527 62	106	589 88	106	62,527 62	
" "						62,527 62
Totals	276,958 59	1,041		1,041	276,958 59	276,958 59

SESSIONAL PAPER No. 19

and Quebec, Classification of Disbursements, &c.—*Continued.*

AND COST PER CUBIC YARD.

Number of Cubic Yards dredged each Locality.	Total Cubic yards for each Dredge.	Cost per Cubic yard. — Each Locality	Average Cost per Cubic Yard for each Dredge.	Kind of Material Dredged.	Locality of Dredging.
		Cts.			
126,600		$4\frac{108}{100}$		Clay and stones	Contrecœur, St. Ours Traverse.
169,200		$3\frac{84}{100}$		Blue clay	" Bellmouth Curve
285,600		$4\frac{04}{100}$		Soft clay and sand	Sorel to Ile de Grace.
18,000		$20\frac{35}{100}$		Clay, sand and stones	Pte. aux Trembles (en haut).
50,000		$13\frac{07}{100}$		Clay and stones	Port St. Francis.
	649,400		$5\frac{81}{100}$		
241,050		$6\frac{89}{100}$		Blue clay and stones	Contrecœur Traverse.
53,650		$0\frac{59}{100}$		Clay, sand and boulders	Port St. Francis.
11,640		$35\frac{99}{100}$		Clay and stones	Pte. aux Trembles (en haut).
	306,340		$12\frac{07}{100}$		
78,800		$20\frac{74}{100}$		" "	" "
206,550		$5\frac{31}{100}$		Soft clay and sand	Sorel to Ile de Grace.
6,400		$37\frac{37}{100}$		Clay and stones	Verchères to Cap St. Michel.
26,200		$24\frac{24}{100}$		" "	Port St. Francis.
	317,950		$11\frac{28}{100}$		
3,150		$22\frac{03}{100}$		Sand	Champlain.
184,750		$14\frac{77}{100}$		Clay and stones	Pte. aux Trembles (en haut).
29,250		$15\frac{81}{100}$		" "	
	217,150		$15\frac{01}{100}$		
86,100		$3\frac{06}{100}$		Blue clay	Contrecœur, Bellmouth Curve.
248,550		$4\frac{00}{100}$		"	" Contrecœur Course.
90,000		$3\frac{38}{100}$		"	" Petite Traverse.
9,900		$8\frac{20}{100}$		" and stones	" Contrecœur Traverse.
194,700		$7\frac{72}{100}$		" "	Lake St. Peter, Nicolet Traverse.
8,100		$10\frac{02}{100}$		Hard clay	Verchères to Contrecœur.
115,050		$3\frac{35}{100}$		Clay and stones	" Cap St. Michel.
	752,400		$4\frac{81}{100}$		
271,080		$10\frac{75}{100}$		" "	Pte. aux Trembles (en haut).
49,800		$15\frac{82}{100}$		" "	Becancour.
	320,880		$11\frac{81}{100}$		
2,055,140		$3\frac{04}{100}$		Soft blue clay	Lake St. Peter.
	2,055,140		$3\frac{04}{100}$		
4,619,260	4,619,260				

DREDGING PLANT.

The following is a description of the dredging plant owned and operated by the Public Works Department in connection with the River St. Lawrence ship channel between Quebec and Montreal.

DREDGES.

The Elevator Dredge 'Laval' (wooden hull).

Length over all—150 feet.
Breadth of beam—30 feet.
Depth of hold—14 feet.
Average draught—11 feet.
Greatest working depth—43·5 feet.
Hull built in Ottawa in 1894.
Steel buckets.
Working capacity per day in hard material—1,000 to 2,000 cubic yards.

The Elevator dredge 'Laurier' (wooden hull).

Length over all—168 feet.
Breadth of beam—32 feet.
Depth of hold—14 feet.
Average draught—11 feet.
Greatest working depth—42·5 feet.
Built at Sorel shipyard in 1897.
¾ cub. yd. buckets for hard-pan.
Working capacity per day in fairly stiff clay—2,000 to 3,000 cubic yards.

The Elevator Dredge 'Lady Aberdeen' (steel hull).

Length over all—148 feet.
Breadth of beam—32 feet.
Depth of hold—13 feet.
Average draught—7·5 feet.
Greatest working depth—42·5 feet.
Built at Sorel shipyard in 1900.
Steel buckets.
Working capacity per day in soft material—4,000 to 5,000 cubic yards.

The Elevator Dredge 'Lady Minto' (steel hull).

Length over all—148 feet.
Breadth of beam—32 feet.
Depth of hold—13 feet.
Average draught—7·5 feet.
Greatest working depth—42·5 feet.
Built at Sorel shipyard in 1900.
Steel buckets.
Working capacity per day in stiff clay and stones—2,000 to 4,000 cubic yards.

The Elevator Dredge 'Lafontaine' (wooden hull).

Length over all—168 feet.
Breadth of beam—32 feet.
Depth of hold—14 feet.
Average draught—9 feet.
Greatest working depth—45 feet.
Built at Sorel shipyard in 1901.
1¼ cubic yards buckets for soft material.
Working capacity per day in soft material—5,000 to 6,000 cubic yards.

The Elevator Dredge 'Baldwin' (wooden hull).

Length over all—165 feet.
Breadth of beam—34 feet.
Depth of hold—14 feet.
Average draught—8 feet.
Greatest working depth—45 feet.
Built at Sorel shipyard in 1902.
1 cubic yard buckets strengthened for fairly hard material.
Working capacity per day in medium material—2,500 to 3,500 cubic yards.

The Hydraulic Dredge 'J. Israel Tarte' (steel hull).

Length over all—160 feet.
Breadth of beam—42 feet.
Depth of hold—12'5 feet.
Average draught—6 feet.
Length of suction frame—80 feet.
Greatest working depth—50 feet.
Built at the Polson Iron Works, Toronto, in 1902.
Working capacity per day in soft material—12,000 to 20,000 cubic yards.

TUGS.

The Tug 'Frontenac' (composite hull).

Length over all—113 feet.
Breadth of beam—23 feet.
Depth of hold—10 feet.
Average draught—9 feet.
Built at Sorel shipyard in 1901.

The Tug 'Eureka' (steel hull).

Length over all—100 feet.
Breadth of beam—22 feet.
Depth of hold—12 feet.
Average draught—11 feet.
Built in Glasgow, Scotland, in 1893.

The Tug 'De Levis' (wooden hull)—Hydrographic surveys.

Length over all—104 feet.
Breadth of beam—20 feet.
Depth of hold—10 feet.
Average draught—9 feet.
Built at Sorel shipyard in 1902.

PART V

REPORT ON GOVERNMENT TELEGRAPH LINES

FOR THE

FISCAL YEAR ENDED, JUNE 30, 1904

GOVERNMENT TELEGRAPH SERVICE.

DEPARTMENT OF PUBLIC WORKS,
OFFICE OF THE GENERAL SUPERINTENDENT,
OTTAWA, ONT., December 9, 1904.

F. GELINAS, Esq.,

Secretary, Department of Public Works.

SIR,—I beg to submit herewith my report on the Government Telegraph Service for the twelve months ended June 30, 1904.

This report, as usual, is prefaced by a list to the present date of the land lines and cables in operation ; with data of lengths, year of construction, number of offices at present established, and an estimate of the traffic handled in each instance.

The usual tabular statements, giving lists of the offices, operating staff, &c., in the several districts are appended to the report; likewise the tariff sheets, showing the rates charged for messages on the several lines.

I have the honour to be, sir,
Your obedient servant,

D. H. KEELEY,
General Superintendent.

GOVERNMENT TELEGRAPH SERVICE.

Location of Lines.	Points connected.	Year.	Length of Lines.			Number of Offices.	Yearly Average of Messages Sent.
			Land Lines.	Cables.	*Total.		
			Miles.	Kt's.			
Newfoundland..	Port au Basque—Cape Ray	1883	14		14	2	
Nova Scotia	North Sydney—Meat Cove (with loops)	1880-02	167½		168¼	17	5,000
"	Across Bras d'Or Channel	1880		¼			
"	" St. Ann's Harbour	1887		¼			
"	" Ingonish Harbour	1887		¼			
"	Bras d'Or—Kempt Head	1904	20		20	3	
"	Meat Cove—St. Paul's Island	1890		20	23	1	50
"	On St. Paul's Island	1890	3				
"	Mabou—Meat Cove	1887-00	109		109	9	2,500
"	Barrington—Cape Sable	1883	16		17¾	Leased.	
"	Across Bear Point Channel	1883		1½			
"	" Lt. House Channel	1883		¼			
"	Mabou—Port Hawkesbury	1903	41¾		732¼	15	1,500
"	Port Hawkesbury—St. Peters	1903	32				
"	St. Peters—Main-à-Dieu	1904	80¾				
"	Main-à-Dieu—Scatarie	1902		1¾	125¼		
"	On Scatarie Island	1904	7½				
"	Gabarous—North Sydney	1904	35½				
New Brunswick.	Chatham—Escuminac	1885	42		42	6	600
	Bay of Fundy System:						
"	Eastport—Campobello	1880		1¾	44½	10	2,500
"	On mainland Eastport	1880	½				
"	On Campobello Island	1880	7½				
"	Campobello—Grand Manan	1880		7¼			
"	On Grand Manan Island	1880	25¼				
"	Grand Manan—Cheney's Island	1890		½			
"	On Cheney's Island	1890	¾				
"	Cheney's Island—Whitehead Island	1890		¾			
"	Partridge Island—Fort Dufferin	1900		¾	¾		
Quebec	Bay St. Paul—Chicoutimi	1881-04	98		98	6	2,000
"	St. Alexis—St. Catherines Bay	1904	78		78	5	
"	Murray Bay—St. Agnes	1904	14½		14½	2	
"	Bay St. Paul—Petite River	1904	13		13	1	
"	Chicoutimi—St. Charles	1903	37		61	10	15,000
"	St. Anne—Lac Claire	1903	15				
"	St. Anne—St. Fulgence	1903	9				
	North Shore Line:						
"	Murray Bay—Chateau Bay	1881-01	1,028½		1090	66	
"	Across Saguenay River	1883		1¼			
"	Bersimis to Manicouagan	1883		12			
"	Manicouagan to Godbout	1883		26			
"	Chateau Bay—Belle Isle	1901		22¼			
	Quarantine System:						
"	Quebec—L'Ange Gardien	1885	13		52¾	8	2,300
"	L'Ange Gardien—Orleans Island	1885		¾			
"	On Orleans Island	1885	29¼				
"	Orleans Island—Isle Réaux	1889		2			
"	On Isle Réaux	1889	2½				
"	Isle Réaux—Grosse Isle	1889		2			
"	On Grosse Isle (all told)	1885-94	3½				
"	St. Jean—St. Famille (loop)	1904	5½		5½	1	

SESSIONAL PAPER No. 19

GOVERNMENT TELEGRAPH SERVICE—*Concluded.*

Location of Lines.	Points connected.	Year.	Length of Lines.			Number of Offices.	Yearly Average of Messages Sent.
			Land Lines.	Cables.	*Total.		
			Miles.	Kt's.			
	Anticosti System:						
Quebec	Gaspé—L'Anse à Fougère	1881	28		316½	9	1,500
"	L'Anse à Fougère—Anticosti	1881		44¼			
"	On Anticosti Island	1881 90	223¾				
"	Anticosti—Long Point, Mingan	1890		21			
	Magdalen Island System:						
"	Meat Cove, C.B.—Magdalen Islands	1880		55	243	12	2,000
"	On Magdalen Islands	1881-02	83½	½			
"	Grosse Isle—Bryon Island	1902		11			
"	Bryon Island—Anticosti	1902		93			
	Pelee Island System:						
Ontario	Leamington—Point Pelee	1889	12		42½	9	800
"	Leamington Dock—Pelee Island	1901		17			
"	On Pelee Island	1889-00	13½				
North west	Qu'Appelle—Edmonton	1883	625		625	18	9,500
"	Moosejaw—Wood Mountain	1885	90½		90½	3	300
"	Wood Mountain—Willow Bunch	1904	38		38	7	2,000
"	Edmonton—Indian Ag. & Stoney Plain	1904	19		19		
"	Edmonton—Arthabaska Ldg.	1904	98		98		
"	Duck Lake—Batoche	1902	9		12½	3	200
"	Duck Lake—Indian Agency	1902	3½				
"	Edmonton—St. Albert	1887	9		36	3	
"	St. Albert—Qui Barre and Alexandria	1902	27				
British Columbia	Ashcroft—Quesnelle (local wire)	1878-87	215		215	6	800
"	Victoria—Cape Beale	1891	118		118	8	8,000
"	Nanaimo—Comox	1893	81		81	2	
"	Parksville—Alberni	1895	29½		86½	4	550
"	Alberni—Cape Beale	1899	57				
"	Alberni—Clayoquot	1902	96¾		96¾	9	1,400
"	Kamloops—Lower Nicola	1899	67		67	5	1,500
"	Golden—Windermere	1901-02	92		92	4	
"	Duncan Sta.—Salt Spring Isl. & Extens.	1902-04	33	¾	33¾		
Yukon	Ashcroft—Dawson and Boundary	1899-01	1845		2,252½	66	42,000
"	Hazelton—Port Simpson and Aberdeen	1901-02	202½				
"	Tagish—Cariboo Crossing	1901	18				
"	150 mile Sta.—Quesnelle Forks	1902	64				
"	Ashcroft—Lillooet	1896	62				
"	Quesnelle—Barkerville	1887	61				
	Total, end of 1904		6270	344¼	6614¼	327	102,100

* For convenience in totalling, the knots of cable are regarded as statute miles.

REPORT OF THE GOVERNMENT TELEGRAPH SERVICE FOR 1903-04.

EXPANATORY NOTES.

The tabular statement prefacing this report shows the total mileage, &c., of the telegraph lines operated by the government. Lines that have been subsidized or constructed and transferred by the government for operation by private companies are not included in this list.

The matter in the following pages comprises merely a statement of specific actions taken in the course of the year, and in any case where no particular reference is made to a line found mentioned in the list, the understanding intended to be conveyed is that that line has been satisfactorily operated throughout the year, without any change of conditions since last made mention of in the annual reports.

NEWFOUNDLAND.

The line from *Port au Basque* to *Cape Ray* continued to be operated as heretofore, under an arrangement with the Anglo-American Telegraph Company.

MARITIME PROVINCES.

New Lines in Cape Breton.—As was mentioned in last year's report the sections between Mabou and Port Hawkesbury, and between Port Hawkesbury and St. Peters, were completed in May, 1903. As soon as practicable thereafter arrangements were made for the putting of these lines in operation and the following appointments went into effect, the office at Mabou continuing as previously, in connection with the line to Meat Cove, which is now worked through to Port Hawkesbury.

Port Hood, agent operator, D. J. McDonald, October 1, 1903.
Judique, agent operator, Miss A. McPherson, October 1, 1903.
Craignish, agent operator, J. D. Cameron, October 1, 1903.
Port Hastings, agent operator, Miss Maggie McFarlane, October 1, 1903.
Pt. Hawkesbury, agent operator, Miss E. McDonald, October 1, 1903.
River Bourgeois, agent operator, Angus Boyd, October 1, 1903.
St. Peters, agent operator, D. Morrison, November 1, 1903.

Local Repair Sections.—As was already the case on the North Sydney-Meat Cove and Meat Cove-Mabou lines, the further extension of the latter line to Port Hawkesbury has been provided for and the following new appointments are added to the list appearing in last years report :—*Mabou-Judique* (20 miles) J. A. Campbell, Port Hood, local lineman at $50 per year; and for *Judique-Port Hawkesbury* (22 miles) J. N. McIsaac, Craignish, $50; the appointments dating from May 1, 1904.

St. Peters-North Sydney and Scatarie.—The construction of the lines from St. Peters to Main-à-Dieu, and on Scatarie island, and from Gabarus to North Sydney; was completed under contract by Messrs. Ahearn & Soper, of Ottawa in March, 1904. The specification followed was the same as for the other new sections in Cape Breton described in last year's report. The line from St. Peters to Main-à-Dieu covers a distance of 80⅝ miles with additional wire on loops of a half mile at Lower L'Ardoise and three miles at Gabarus. The length of line on Scatarie island is 7¼ miles and connection between this and the line on the main land is made by the cable laid for the purpose last year. The length of pole line between North Sydney and the Junction

with the Main-à-Dieu line is 35½ miles and the wire is carried a further distance of three miles on the loop line to Gabarus. Several offices were opened on the St. Peters-Main-à-Dieu section in the course of construction by the teaching operator, Miss Bingham, who qualified the appointed agents in advance while the work of construction was progressing. The offices that have been established are the following :—

St. Peters, agent operator, D. Morrison, November 1, 1903.
Lower L'Ardoise, agent operator, M. Bremner, November 1, 1903.
Grand River, agent operator, Miss J. Finlayson, November 1, 1903.
Fourchu, agent operator, Miss May Hardy, November 1, 1903.
Gabarus, agent operator, Miss C. Grant, aJnuary 16, 1904.
Louisburg, agent operator, Wesley Townsend, February 1, 1904.
Main-à-Dieu, agent operator, Miss Maud Dixson, June 1, 1904.
Scatarie Island West, agent operator, E. E. Pope, August 15, 1904.
Scatarie Island East, agent operator, J. T. Martell, August 1, 1904.
North Sydney (branch from Gabarus, Western Union Telegraph connected), December 11, 1903.

Scataric Island Cable.—In some rough weather in June (1904) this cable was damaged and communication ceased on the 24th of that month (Note.—The ss. 'Tyrian' on her way to the gulf shortly afterwards attended to the repair and restored the connection on July 23.)

Southern Telephone Company.—In consequence of the liability to interference in places by the wire of the new line with the wire of the telephone company that had been previously following the same route, an agreement was entered into whereby the government telegraph wire may be put on the telephone company's poles where needful for clearance and the company may put their wire on the telegraph poles wherever desired on the stretch between Louisburg and Gabarus.

Circuit arrangements.—Since these lines were completed, automatic repeaters have been placed at Gabarus, whereby North Sydney has direct communication with Scatarie, and at the same time via Gabarus and St. Peter's with Port Hawkesbury ; and for convenience of the operation of the older sections, automatic repeaters have been placed at Meat Cove, whereby North Sydney has direct communication round that way also with Port Hawkesbury, the arrangement thus affording alternative routes, in event of local trouble, for the handling of business exchanged with the Western Union Telegraph system at the North Sydney office.

North Sydney—Meat Cove Section.—Pursuant to the arrangement made last year for the regular services of a general lineman for the Meat Cove-Port Hawkesbury section, as set forth in the last annual report, a similar appointment was decided upon for the Meat Cove-North Sydney section, and Mr. S. S. Burke, of Ingonish, joined the service in that capacity in April, 1904.

Northing beyond ordinary repair work, performed by the regular staff, was called for during the year.

Inverness Town.—This is the name by which the former Broad Cove office is now known. As mentioned in last year's report, the location of this office was a three-mile loop changed from the old place to the settlement that has grown up about the mines. The operating arrangement of this office since the change was made October 20, 1903, has been a commission of 50 per cent of the government line tolls without a guarantee, instead of the former allowance of 25 per cent guaranteed at the rate of $50 per year.

Cape North (Inland).—In May, 1904, an office was opened at this place, which is 5 miles from Aspy Bay and 4 miles from Dingwall, with Mr. John McDonald as

agent, the operating arrangement being a commission of 25 per cent of the government line tolls with the usual guarantee at the rate of $50 per year.

New Campbellton.—Miss M. C. Campbell, former agent, having resigned the office on May 1, 1904. Mr. B. Dunlop was appointed to take charge of it, but afterwards requested another arrangement. (This office was put in charge of Mr. J. S. Birchall in July, with same guaranteed commission as before.)

At Ingonish (North Bay).—Owing to the decease of the former agent, Mr. J. M. Burke, who had the office since 1882, a new appointment was called for in May, 1904; and in June it was taken over by Mrs. S. S. Burke, with same operating arrangement as before.

At South Gut.—On the Baddeck loop line, an office is about to be opened (June, 1904) with Miss Rachael Morrison as agent-operator on commission of 25 per cent of government line tolls, with the usual guarantee at the rate of $50 per year. There was an office at this place prior to December 31, 1899.

At Baddeck.—The office is to be transferred from Mr. Alex. Anderson, former agent-operator, to Mrs. Anderson, from July 1, 1904, and the operating arrangement provides for a commission of 25 per cent with a guarantee at the rate of $100 per year, the business of the office being considered sufficient to warrant an exception to the usual rate of $50, that was previously attached to this office.

At Meat Cove.—Where connection is made with the Magdalen islands and St. Paul's island cables, and where a set of automatic repeaters is now located as already mentioned (New lines, Circuit arrangements) a special arrangement was recently made (May, 1904) whereby Mr. A. B. McDonald, agent and circuit manager, was temporarily relieved by Miss M. J. McDonald, as acting agent-operator; with Mr. J. J. LeBourdais, of Grindstone, Magdalen islands, as assistant; and his services called into requisition in the capacity of electrician accompanying the ss. 'Tyrian' in the important work of cable repairs elsewhere made mention of in this report. The arrangement thus effected has proven in every way satisfactory.

Local repair sections.—Mr. D. McLeod, who had been attending to the North Sydney-Englishtown section, resigned from June 30, 1903, and was succeeded by Mr. D. Campbell; the allowance, previously $60 per annum, was increased to $100.

Renewal of wire.—At North Sydney, in consequence of the Meat Cove line (built in 1879) having within the town and immediate neighbourhood become badly deteriorated and weak, it was found advisable to renew that portion of it for a length of 1½ miles. This was done accordingly in January, 1904.

MEAT COVE—MABOU SECTION.—*At Cape St. Lawrence.*—As provided for last year, an office chiefly in the interest of the signal service, was established with C. Jamieson in charge, as agent-operator, his appointment dating from January 1, 1904.

At Pleasant Bay the office formerly in charge of Mrs. D. Smith was, upon her request, transferred to Miss M. J. McIntosh from October 15, 1903.

Local repair sections.—Mr. P. LaRede was appointed to look after the Grand Etang-Cheticamp section from May 20, 1903, instead of Mr. M. Lindee, as given in the list in last year's report; and Moses F. Aucoin was appointed June 1, 1904, for the Cheticamp-Barren section, formerly attended to by F. Aucoin, resigned.

Nothing beyond ordinary repair work, performed by the regular staff, was called for during the year.

BOULARDARIE ISLAND.—The supply of poles for and the construction of the line from Big Bras d'Or to Upper Kempt Head, twenty miles, was put in the hands of Mr.

Donald McKenzie of Boulardarie Centre for performance by day labour and is nearing completion. The specification was the same as that followed in the case of the other recently built lines in Cape Breton.

MAGDALEN ISLANDS.—Pursuant to what was mentioned in last year's report, a further supply of 800 poles (cedar) was obtained at Gaspé for the completion of the reconstruction work that was proceeded with in the course of the season. An extension of the Point Basse loop line is to be made to South Beach as soon as the poles can be distributed in that section.

At Grosse Isle.—In consequence of the establishment of through connection between Cape Breton and Anticosti by way of the Bryon Island cables an assistant operator, Mr. J. Quinn was appointed from December 1, 1902.

Cable Repairs.—The cable between Meat Cove and Old Harry became interrupted on May 2, 1904. The ss. 'Tyrian' happened to be soon afterwards available however and a repair was effected on the 31st of the same month. The trouble proved to be a break 24¾ miles off the Magdalen Islands, and the indications were that it had been caused by a vessels anchor.

Bryon Island Cables.—The cable between Grosse Isle and Bryon Island ceased working on September 12, 1903. Communication was restored by the ss. 'Tyrian' on October 3. It was found chafed through on rocky bottom off the Bryon Island landing. This same cable gave out again on January 1, 1904; the interruption was for a time thought to be due to some local trouble at Bryon Island but was finally located in the cable stretch. The connection was again restored by the ss. 'Tyrian' on June 3, 1904. This time the cable was found badly crushed at several spots near the Bryon Island landing and broken off short 1¼ knots farther out.

The *Bryon-Anticosti section* became interrupted on December 2, 1903. It would have been impracticable to attempt a repair so late in the year and in the course of the present season this cable remained unattended to because of the services of the ss. 'Tyrian' being required elsewhere for more important stretches. Meanwhile however no inconvenience was experienced as Anticosti was reached by way of the cables from Gaspé and Long Point of Mingan. (Note.—This cable between Bryon and Anticosti was restored by the ss. 'Tyrian' on October 3, 1904. It was crushed by ice and broken off 2¼ knots out from Bryon Island and also broken on the beach at the Heath Point end.)

Anticosti Island.—Under an appropriation provided for the purpose last year a sufficient quantity of No. 6 galvanized iron wire was procured for the renewal of the stretch of 184 miles between Becscie river and Fox Bay and in the course of the present season this and other requisite material is being delivered at several points in readiness for the work of stringing which will be proceeded with as early as practicable.

Some clearing, tree trimming, &c., and general repairs were done by the regular lineman with local assistance on the stretch between Mechastic Bay and South West Point and such other work was done along the line as was needful to keep it in working order.

Cable Repairs.—The cable between Heath Point and Bryon Island was interrupted from December 2, 1903, until October 3, 1904, as already related under the heading of Bryon Island cables. The stretches between South West Point and Gaspé and between Mechastic Bay and Long Point continued in good working order since the last named cable was repaired in August, 1903. This through communication between the North shore and Gaspé afforded an alternative route for the traffic which would otherwise have

been interfered with by the interruption of the cable between Godbout and Manicouagan, elsewhere dealt with, and the service was satisfactorily performed throughout the year.

Indemnity for lost anchor.—In consequence of the sacrifice of an anchor and hawser by the schooner 'Massachusetts' on May 15, 1903, at a spot about ten miles off South West Point where she was believed to have run foul of the Gaspé cable, and thereupon took the course indicated with a view to its preservation from damage, the department was called upon to make good the loss sustained, and payment was made accordingly upon the presentation of the usual documents establishing the value, &c., as is called for in such cases.

ESCUMINAC LINE.—Arrangements were in hand at the close of the fiscal year for the opening of an office at McDougall's or Loggieville, formerly called Black Brook, with Mrs. M. McDougall as agent operator.

General Repairs.—At the close of the fiscal year an arrangement was being made for a general overhauling of this line, the poles requiring to be straightened up and renewed in places.

CHATHAM-TRACADIE.—At the last session of parliament there was an appropriation of $2,000 made for aid towards an extension of the Mirimichi Telephone Company's system from Chatham to Tracadie and at the close of the fiscal year this work was nearing completion. (Note.—This line, sixty miles in length, was completed in a satisfactory manner and put in operation in August, 1904. Under an agreement with the department, the company is to handle messages on government business free of charge).

BAY OF FUNDY.—The cable between Campobello and Grand Manan, which had been working well since the repair of July 25, 1903, noted in last years report, suddenly became interrupted on April 30, 1904. The ss. 'Tyrian' was sent to the locality as soon as practicable and restored the connection on June 17, 1904. In this instance the trouble was found to be a quarter of a mile off the landing at Long Eddy, the sheathing wires were corroded away and it is likely some small vessel's anchor ran foul of and parted the core.

Deer Island.—Under an appropriation that was made for the purpose last year, a local telephone company establishing a system on Deer Island were aided by the provision of two lengths of cable connecting with Eastport, Maine, and with Campobello Island; on an understanding that the company undertakes in the event of an interruption at any time, to themselves make repairs; or await the convenience of the department, which would be referable to the presence of the government cable ship in the vicinity on occasion. These cables were laid by the ss. 'Tyrian,' June 21-23, 1904; from Johnston's Cove near Eastport to Fair Haven, Deer Island, 2¾ knots of cable; and from Chocolate Cove, Deer Island, to Pollock Cove, Campobello, two knots. Four terminal huts were also provided; two of them being put up by the ship's carpenter; and the others, for which material was left on the spot, subsequently dealt with locally.

NORTH SHORE OF ST. LAWRENCE (West of Bersimis).—The construction of new lines in the Chicoutimi district, in hand in the course of the summer of 1903, as mentioned in last year's report, was carried to completion with the exception of the line to Descente des Femmes which was only carried from St. Anne to St. Fulgence, nine miles. All of this work has been performed without contract by day labour under the immediate direction of M. J. C. Tache, resident engineer for the department at Roberval. The further length, about twenty-five miles, from St. Fulgence to Descente des Femmes has been provided for; and, as well, a loop off the main line at *St. Alexis, to Ferland,* a distance of four and a half miles. These extensions are being proceeded

with this season. Offices were opened up on the new lines with appointments of agents as hereunder:—

On branch from Chicoutimi to St. Charles, thirty-seven miles.

St. Anne, agent and lineman, P. Gauthier, August 1, 1903.
Shipshaw, agent operator, Aug. Dufore, September 1, 1903.
Shipshaw North, agent operator, J. Murdock, September 1, 1903.
St. Léonard, agent operator, Geo. Gagnon, September 1, 1903.
St. Ambroise, agent operator, O. Grondin, September 1, 1903.
St. Charles, agent operator, B. Boucher, September 1, 1903.

On branch from St. Anne to Lac Claire, fifteen miles.

Range IX, agent operator, Thos. Simard, February 1, 1904.
Lac St. Charles, agent operator, J. Bouliane, January 1, 1904.
Lac Claire, agent operator, Albert Dufore, January 1, 1904.

On branch from St. Anne to St. Fulgence, nine miles.

St. Fulgence, agent operator, Rev. G. Gagnon, January 1, 1904.

On branch from St. Alexis to St. Catharines bay, seventy-eight miles.

St. Felix d'Otis, agent operator, Rev. H. Neron, November 1, 1903.
Petit Saguenay, agent operator, M. Tremblay, September 1, 1903.
Anse Cheval, agent operator, Price Bros., November 1, 1903.

The other two short lines that were mentioned as being in hand last year were constructed by day labour under the supervision of Mr. A. Boyer, and were in due course put in operation with appointments as hereunder.

On branch from Murray Bay to Trinity, fourteen and one-half miles.

St. Agnes, agent operator, Jas. Goudreault, January 1, 1904.
Trinity (Guay), agent operator, Jos. Guay, December 1, 1903.

On branch from Bay St. Paul to Petit Rivière, thirteen miles.

Petit Rivière, agent operator, J. Bouchard. December 1, 1903.

Repair sections.—Upon completion of the line spanning the gap between St. Etienne and Anse St. Jean, noted in last years report, it was found advisable to rearrange the repair sections of the North Shore system west of Bersimis, and the appointment of an additional lineman, J. Martel at Anse St. Jean, was made from May 1, 1904. The sections are now defined as hereunder :—

St. Anne-St. Charles, Ste. Anne-Lac Clair, Ste. Anne-St. Fulgence—Lineman, P. Gauthier, St. Anne.

Chicoutimi-St. Anne, Chicoutimi-St. Felix d'Otis, Chicoutimi-LaGalette—Lineman, J. Fortin, Chicoutimi.

Baie St. Paul-LaGalette, Baie St. Paul-Petit Rivière—Lineman, A. Gauthier, St. Urbain.

St. Felix d'Otis-Anse Cheval—Lineman, J. Martel, Anse St. Jean.

Murray Bay-Bay des Rochers, Murray Bay-Trinity (Guay)—Lineman, A. Brassard, Port au Persil.

Bay des Rochers-Bergeronnes, St. Catharines Bay-Anse Cheval, Tadousac-Sacre Cœur—Lineman, G. Bouliane, St. Catharines Bay.

Bergeronnes-Bersimis—Lineman, E. Courbron, Port Neuf.

Roadway clearances.—In consequence of an awkward growth of underbrush and trees obstructing the roadway skirted by the telegraph line between Port Neuf and Bersimis and elsewhere. provision is being made for a general clearance in the sections

where most called for, and it is intended to have this work taken in hand in the course of the ensuing year.

OFFICE CHANGES, &C.

At Baie St. Paul.—In connection with the operation of the new branch line to Petit Rivière a special allowance of $25 per year for repeating of messages and $12 per year for care of main battery is made to the agent Mr. F. Boivin.

At Murray Bay also in connection with the new branch line to St. Agnes and Guay a similar special allowance has been made.

At Escoumains arrangements were being made at the close of the fiscal year to open an accommodation office, apart from the regular one, at the mills of the Saguenay Lumber Company. Any commission, allowed on business handled, goes to the regular local agent.

Second wire Murray Bay—St. Catharines Bay.—In consequence of the congestion of traffic in this section a second wire was provided for and the work of putting it up was in hand at the close of the fiscal year, under the foremanship of the general lineman, Mr. A. Brassard in that section. This new wire in conjunction with the special one some time ago, provided by the Great North Western Telegraph Company, west of Murray Bay, affords a direct and unincumbered circuit for the north shore line extending down beyond the river Saguenay.

North Sshore St. Lawrence (East of Bersimis)—Godbout section.—The cable between Manicouagan and Godbout, 26 nautical miles, mentioned in last year's report as having been put in order on April 22, 1903, became interrupted again on December 1, 1903. Local examination indicated the trouble to be on the Manicouagan shoals, but the ice already formed was too heavy to admit of any attempt being made to get at it, and action had to be deferred.

In the month of April following, a further examination was made resulting in the conclusion that the trouble was in more than one place and some of it in deep water, rendering a repair impracticable until the cable ship would be available for the purpose. Meanwhile, however, with the exception noted below, there was no interruption of traffic, as the business with offices on the North shore below Manicouagan, was exchanged via the Long Point—Anticosti—Gaspé cable stretches in a satisfactory manner. (Note.—This service continued throughout the entire season until the Godbout-Manicouagan section of the Godbout-Bersimis landline that was in contemplation last year, was completed November 3, 1904, when direct communication between Quebec and the offices down the coast was re-established. There was a break in this service, however, of three weeks from July 16 till August 4, 1904, during an interruption of the Long Point-Anticosti cable, attended to by the ss. 'Tyrian.' In that interval, messages were handled by a boat service established between Manicouagan and Godbout for exchanges as frequently as were found needful.)

Alternative landline connection.—In pursuance of what was stated in last year's report an appropriation was obtained for the construction of a landline between Bersimis and Godbout, a distance of about 80 miles. A supply of cedar poles 20 feet long and 6 inches across the top corresponding to those elsewhere used along the coast was contracted for with Messrs. J. & N. Tremblay, of Chicoutimi, and deliveries were being completed at the close of the fiscal year. It was decided to answer every purpose best to have the work done by day labour with the foremanship of experienced hands instead of having it done under contract.

NOTE.—Arrangements were made accordingly, and as soon as the material was delivered, the work, with Mr. Aurelien Boyer as superintendent of construction, was taken in hand in three separate sections by gangs in charge of Messrs. N. A. Comeau, F. Gallienne, and Fidele Cormier. The work had so far progressed by November 3, when it was discontinued till next season, that connection was made that date at

Scougall's Mills with the existing landline stretch of the cable route ; thus affording through communication for the offices below with Quebec, as has been already noted above. The new line when carried on beyond Scougall's Mills, will go west and south to Bersimis, and the landline stretch at present on Manicouagan, between Point Outardes and Scougall's Mills may be operated as a branch from the latter place in event of discontinuance of use of the cables.

Pathway clearances and general repairs, &c., below Manicouagan.—In the autumn of 1903, some work was done in clearing trees and undergrowth and renewing bridges along the line between Little River and Moisie and between Moisie and Seven Islands; the general repairs to the line as were called for were made along the section between Point des Monts and Thunder river by the general repairer on that division with a gang locally engaged for the purpose. The other sections below were attended to by the local linemen and inspectors according to the arrangements made to this end as mentioned in the last annual report. In this connection, aid to the extent of $50 each was agreed upon towards the special provision of buildings for the repair stations established at *Pigou, Betchouains, Musquaro, and Baie des Ha.*

For the use of Inspector P. C. Vignault, in his journeying along the coast in his section between St. Augustine and Chateau Bay, a small yacht was provided in August, 1903.

New Offices and Office Changes.

At Point aux Anglais.—The accommodation office was closed May 21, 1903, and re-opened again for the winter on October 26, 1903.

At Pentecost, where the district superintendent of the line below Bersimis is located, an appointment of an assistant operator, Mrs. E. H. Têtu, was made dating from May 1, 1904.

At Clarke City the accommodation office was closed November 6, 1903, and was reopened for the summer on April 17, 1904.

At Moisie.—The accommodation office in the premises of Messrs. Holliday Bros., apart from the regular office, and designated Moisie East, that was opened for the convenience of the firm in May, 1902, was closed on October 16 following, and re-opened June 1, 1903; closed September 16, 1903, and reopened again May 9, 1904.

At Pigou.—Half way between Moisie and Little River an office was opened on October 1, 1902, with Mrs. P. Wright as operator and Peter Wright as local lineman.

At Watichou, the former agent, Mr. Saltsman, withdrew, and the office was closed September 4, 1903. It was re-opened on December 1 following with Mrs. Clorinde Bourque as operator and John Bourque as local lineman. This office is in the premises of Mr. J. Beetz.

At Rocky Bay, the former agent, Mr. W. Kennedy retired, and the office was closed September 6, 1903; is was re-opened April 20, 1904, with Miss B. E. Chevelier as operator, and L. O. Chevelier, local lineman.

At Chateau Bay.—In consequence of the local agent having the Marconi station to attend to in addition to the landline and Belle Isle cable circuit, the services of a local lineman, John McCarthy, for the Chateau Bay-Green Bay section, a length of about 22 miles, were temporarily engaged from November 1, 1903.

Automatic repeaters.—Owing to the number of offices along the north shore and the very considerable distances covered by the line, it was found advisable to divide the circuit in sections and operate them through automatic repeaters. A set of the latter was installed at Bersimis two or three years ago, and facilitated the handling of business between Quebec and the offices below as far as Long Point, where the messages are repeated manually between the east and west ; and a set was put in operation at Mutton bay in January last (1904), whereby direct communication is had between Chateau Bay, the terminal station of the landline, and Long Point. At the latter office a

set of button repeaters is provided whereby the Anticosti cable circuit from Gaspé; can be put through to Quebec or to Chateau bay, as may be required on occasion. This arrangement proved very advantageous during the present year in the handling of the north shore traffic via Gaspé, in consequence of the interruption of the Godbout-Manicouagan cable as elsewhere mentioned.

Belle Isle Cable.—The cable between Chateau Bay and Belle Isle, which was put in working order on August 29, 1903, as mentioned in last year's report, became interrupted again on June 23, 1904, probably due to icebergs, as on the last occasion. Communication is maintained by means of the Marconi wireless stations, which have been regularly in operation under the conditions described in last year's report.

[Note.—The ss. 'Tyrian' proceeded to the straits to make a repair of this cable in October, 1904, but was obliged to leave it in consequence of the lateness of the season and continuous stormy weather, rendering operations impossible. The Marconi stations are counted upon to answer every purpose pending the restoration of the cable connection next season.]

Isle aux Coudres Telephone System.—The cable between the island and the mainland at Les Eboulements was damaged by ice and rendered unworkable on February 1, 1904, and could not be got at for repairs until May, when communication was restored. The repairing of this cable is undertaken by the department as an aid towards the operation of a local telephone system, and a payment to the extent of $150 per year towards the maintenance of the line on Isle aux Coudres, is also made to the proprietor of the system, Mr. H. Lemieux, of Murray Bay.

Grosse Isle Quarantine Line.—On April 4, 1904, this line became defective below St. François ; an examination was made at Isle Reaux as early as possible, and the trouble was found to be in the cable stretch between that place and St. François. Intermittent communication was had with Grosse Isle, and it improved after some handling of the cable at St. François shore, where finally the cable was found to have been crushed by ice. It was put in good order in the course of the summer and arrangements were made to have the shore length re-cemented in the rocks from which it had been dislodged.

At St. Famille, on a loop line from St. Jean, an office was opened on April 2, 1904, with Mr. P. O. Latourneau as agent-operator, on the usual allowance of 25 per cent of the government line tolls, guaranteed at the rate of $50 per year.

This loop or 2-wire line, was for most part built by local labour under the direction of Mr. A. Boyer, early in the winter of 1903, and was completed by Mr. P. Pouliot, agent at St. Jean, in the following spring. It extends along a roadway across the island a distance of 5½ miles. Cedar poles 25 feet long, procured at St. Anne de Beaupré, No. 6 galvanized iron wire, and white porcelain insulators, were used in the construction.

ONTARIO.

Pelee Island Line.—In the absence of an available fund for the purpose of making the contemplated change in the track of the cable with a view to its betterment, there was some delay attending an attempt to restore communication after the break reported last year as having occurred on May 19, 1903. However, on the approach of winter it was thought well to make another attempt to put it in working order; and Mr. J. A. Parr, of the head office staff, proceeded to Leamington, and in conjunction with the district superintendent, Mr. J. McR. Selkirk, undertook the task with the aid of a steam tug early in November. They experienced a great deal of bad weather and after succeeding in getting the cable clear from both sides to within a space of a mile midway of the stretch (17 knots from Leamington dock to North Point, Pelee Island)

they were obliged to stop the work because of the presence of ice and danger therefrom to the boat employed. Further action was thereupon (December 9) deferred till the present season. In June this year (1904), Mr. Selkirk resumed operations where the work had been left off and succeeded in restoring communication on the 16th. Provision is being made for the coming year whereby some action may possibly be decided upon with a view to a safer working condition of this cable ; but it is very questionable whether there is any advantageous choice in the location of it, as the whole neighbourhood presents the liability of interference from vessels' anchors.

NORTH WEST.

CONSTRUCTION OF NEW LINES.—Under appropriations that were made for the purpose last session there was a considerable amount of construction work in hand by day labour under the direction of the district superintendent, Mr. J. S. Macdonald, at the close of the fiscal year. Already, in anticipation of a vote for the purpose, a 2-wire branch forming a loop off the main line from a point between Pitt and Onion Lake was carried a distance of 22 miles to connect with the new settlement of Lloydminster. It was completed and put in operation on April 18, 1904, with Miss E. McCleneghan as agent-operator. In the construction of this line, native wood obtained from the nearest available sources along the route was used for poles and the other material consisted of No. 6 galvanized iron wire (a quantity of that size being on hand and available at the time) white porcelain insulators and oak brackets. A special building was put up for the accommodation of the office.

Willow Bunch.—For the extension to this place, 38 miles from Wood Mountain, mention of which was made in last year's report, a supply of tamarack poles 25 feet long, to admit of their being reset in course of time, were obtained at Prince Albert and hauled over the prairie from the railway at Moose Jaw.

NOTE.—The work of construction of this line was delayed for a time by wet weather, but it was completed and put in operation, with H. A. Noel, agent, October 19, this year (1904).

The wire used in this and all of the other lines mentioned hereunder was No. 8 galvanized iron with white porcelain insulators and oak brackets. A special building for the accommodation of the office is being arranged for.

Edmonton to Athabasca Landing.—(96 miles), a line was also in hand for this connection and followed an existing roadway. Poles were obtained along the route. No. 8 galvanized iron wire, &c., as above were used in the construction. [Note.—This line was finished and put in operation on October 1 (1904), with Jas. McKernan as agent-operator]. A special building for the office had to be provided.

Edmonton-Indian Agency, Spruce Grove and Stony Plain.—Provision was made last year for the construction of a telephone line between Edmonton and Edmonton Indian agency, a distance of 14 miles ; the poles to be supplied along the route by the local residents. While this work was in hand the extension of it to Spruce Grove, 5 miles, and further to Stony Plain, 5 miles, in all, 24 miles, was decided upon. No. 8 galvanized iron wire, &c. as above, were used in the construction. [Note.—Telephone apparatus has been provided and this line will be in operation before the close of the present year (1904)].

Andrew.—Four and a half miles off the main line from Victoria, Alberta has been connected by a loop constructed under an appropriation provided for the purpose last year. Poles were obtained from nearest sources along the route and No. 8 galvanized iron wire, &c., were used in the work. An office was opened with Mr. A. K. Morrison as agent-operator on June 7, 1904.

At Edmonton.—The office (joint with C. P. Tel.) was removed September 1, 1903, from the premises formerly occupied to more convenient and commodious quarters in a new building erected by Messrs. D. R. Fraser & Co.

At Pitt.—An office was opened temporarily on May 1, 1904, in charge of Mr. W. A. McClenighan, of Onion Lake, in the interest of the Department of Immigration. (This office was again closed August 6, 1904.)

At Clark's Crossing, the point of departure from off the main line of a loop 14 miles to Saskatoon, an office was temporarily established for the accommodation of the Canadian Northern Railway for the month of July, 1903.

At Humboldt the office and repairs station discontinued in 1893, is to be re-opened, and arrangements are in hand for the erection of a building at that place for the purpose.

Transfers of Agents and Linemen.—Several changes were made in the location of members of the staff on the North-west lines in the course of the present year, and will be found noted in a tabular statement in the appendix to this report.

Old Telephone Line, Lethbridge-Cardston.—Provision was made last year for the reconstruction of the Spring Coulee-Cardston section (16 miles) of this line which was built, in all 57 miles, in 1894, and subsequently paralleled between Lethbridge and Spring Coulee. No action has been called for, however, as the local system of the Bell Telephone Company has lately covered the ground.

Shifting of line to highway.—As mentioned under the head of *Wood Mountain line* in last years' report, action was being taken in the matter of shifting the telegraph line in places from its original location to the road allowances on highways of late provided. To this end material for an aggregate reconstruction of 7 miles was sent to Moose Jaw and to Qu'Appelle for the same purposes north of that point, an aggregate of 6 miles ; the work to be done incidentally to general repairs, &c., as early as practicable after the roadways have been surveyed and definitely located.

In the course of construction of the Edmonton-Athabasca Landing line, which was carried on the north side of the river, parallel with the old line between Edmonton and Fort Saskatchewan, 24 miles, it was found expedient to discard the later stretch as it would soon need renewal, and to shift the wire to the new pole line on the north side. A second wire for this purpose was strung on the new pole line and the old wire on the south side was afterwards removed.

Renewals of Poles.—An examination of the lines throughout has been made in the course of the present season with the result that some renewals of the poles in places is found to be called for. Provision to this end will be made in the course of the coming winter so that the necessary work may be done next season.

Banff Park Telephone System.—An inspection of this system has been made by the District Superintendent, and with a view to improving the service and enhancing its usefulness some further extension and renewal of equipment next season has been provided for.

BRITISH COLUMBIA.

ALBERNI-CLAYOQUOT LINE.—There is nothing special to record as to the upkeep and operation of this line throughout the year.

Repair Sections.—As noted in the tabular statement appended to this report, *New Alberni* is but the post office address of the lineman, E. B. Girard. He is stationed at Uchuclesit midway between Franklin Creek and Pipestem inlet and looks after that section. The stretch between Alberni and Franklin Creek is kept in order incidentally with the Canadian Pacific telegraph wire strung on the same poles.

At New Alberni or Alberni wharf.—An office was opened on commission with Mr. A. E. Waterhouse as agent operator on October 1, 1903.

At Clayoquot a deed of two lots of land within the townsite was made by local residents to the Honourable the Minister of Public Works for the purpose of the tele-

graph service and thereupon in November, 1903, a small building for the accommodation of the office was erected.

ALBERNI-CAPE BEALE LINE.—The section, with the line to Parkville from Alberni, is being maintained and operated in conjunction with the Canadian Pacific telegraph extension to Bamfield Creek, as mentioned in the annual report for 1901-1902.

NANAIMO-COMOX LINE.—The maintenance in satisfactory operation of this line has been conducted under the conditions mentioned in last years report. There has been no change in staff or otherwise called for in the interval.

VICTORIA-CAPE BEALE LINE.—Conditions of maintenance and operation have continued as mentioned in the last annual report. The only change to be noted is the appointment of E. C. Williams as agent operator and W. G. H. Ellison as lineman both at *Port Renfrew* in place of B. H. Kirkpatrick, former agent and repairer, resigned September 22, 1903.

At Port Renfrew, following upon the above mentioned withdrawal of Mr. B. H. Kirkpatrick, the building with lot formerly owned and occupied by him as an office and dwelling was purchased by the department.

At Jordon River (*Shirley*).—Percy Clarke was appointed agent lineman on December 1, 1903, in place of J. Goudie, resigned.

KAMLOOPS-NICOLA TELEPHONE LINE.—Under a special appropriation that was made for the purpose, there was a considerable amount of resetting of the poles in places along this line done in the course of the season of 1903; and for the readier attention to the removal of trouble liable to occur in consequence of the decaying condition of the poles generally, the District Superintendent, Mr. W. Henderson, made arrangements whereby at the cost only of time taken up on occasion by the work called for, the upkeep of the line was undertaken in sections by several of the subscribers at the established stations as hereunder:—

	Miles.
Kamloops-Anderson Creek, C. S. Stevens, Kamloops.....	12
Anderson Creek-Stump Lake, T. Bullman, Stump Lake.....	13
Stump Lake-Quelchena, E. O'Rourke, Quelchena.....	20
Quelchena-Nicola Lake, A. E. House, Nicola Lake.....	9
Nicola Lake-Lower Nicola, G. Armstrong, Lower Nicola.....	13
Total.....	67

The appointment of Mr. C. S. Stevens as general repairer for the whole line, and to have the local agency at Kamloops, was subsequently made and he took charge from June 1, 1904, connection being made with the Central Telephone office instead of with the Canadian Pacific telegraph office as formerly.

[NOTE.—As the result of a recent inspection made by Mr. J. G. Brown of the district superintendent's office (August, 1904) the need for an early renewal of the poles along the whole length of this line, which was built in 1899, has been ascertained; and provision to this end will be made in the estimates for the coming year.]

GOLDEN-WINDERMERE LINE.—Owing to some unsatisfactory experience in the operation of this line at times in the course of the year, some changes were decided upon in the disposition of staff and it is expected that as now provided for the requirement will be more advantageously served. The present arrangement is as hereunder :—

Golden (66 miles), telegraph, C. E. Wells, agent-operator.

Spillimacheen, telegraph, V. F. Dunn, agent and lineman; telephone, J. E. McKay, subscriber.

Windermere (16 miles), telephone, commission office.

Athelmer (5 miles, looped back on pole line), telephone, commission office.

Wilmer (5 miles), telegraph and telephone, R. A. Power, agent and lineman.

The dual service. telegraph and telephone is locally considered to best answer the purposes of the community.

Salt Spring Island Telephone Line.—This line, as mentioned in last year's report, extended from Duncan Station on Vancouver island, to Edwards' store, Salt Spring island; the further extension, 9 miles to Ganges Harbour, was provided for and carried out in March, 1904. An inspection of the whole line, now measuring 24 miles of land-line and ¾-mile cable, was recently made, and it was found in a satisfactory condition. A still further extension of 3 miles beyond Ganges Harbour to Vesuvius Bay, on the island, is being provided for.

[Note.—On July 23, 1904, an interruption occurred in the cable section across the Sanson narrows. On examination it was found to be wasted away by rust and abrasion for as much of its length as was overhauled, and a new length of 1¼ miles, calculated to lay clear of rocks in the old track, is called for, and a sum therefor will be included in the estimates for the coming year.]

YUKON.

(This division includes the Ashcroft-Quesnelle line and branches.)

Throughout the year no other line work has been called for beyond what was attended to by the regular staff.

Such staff changes, &c., as have been made since the list of offices accompanying the last annual report was compiled, are noted in the revised list, or tabular statement, in the appendix hereto.

Branch Line Repairs.—The branch lines from Quesnelle to Barkerville, 61 miles; and Ashcroft to Lillooet, 62 miles; having been found to need some general overhauling and resetting of poles, provision is being made for the performance of that work before the close of the present year (1904).

Establishment of New Offices.

At Cache Creek, 4 miles from Ashcroft, an office was opened December 22, 1903, to be operated on commission.

At Lafontaine, 45 miles from Quesnelle, on the Barkerville branch, an accommodation office was opened on February 17, 1904, for the convenience of the Caribou Consol Company, and several other mining camps in the neighbourhood.

At Lorne Creek, 22 miles from the Skeena canyon, on the Port Simpson branch, an office was opened on April 30, 1904, with A. J. West as agent-operator.

Decease of Members of Staff.—Advices reached the department of the deacease of Mr. F. B. Gorrell, who occupied the position of agent-operator at Pike river, near Atlin, in February, 1904; and of the sad loss by accidental drowning of Mr. W. S. Lanktree, agent-operator at Yukon Crossing, between Five Fingers and Fort Selkirk, on June 9, 1904.

Alaskan Connections.—On August 24, 1903, communication was established by the United States military telegraph between St. Michael and Boundary, the terminal station of the Yukon line, whence a connection had already been in opration to Valdes.

The following notes in connection with the Yukon line were intended to be included in the body of the report submitted last year (1902-03) :—

Maintenance Expenditure.—In addition to the salaries given in the list of staff, there is made at all points beyond Quesnelle an allowance of provisions to each person

to the value of $30 and upwards per month; or a cash equivalent, according to the remoteness of the stations from basis of supplies.

A reasonable explanation of this very considerable outlay is found in the circumstance that these arrangements for staff, although costly, are, so far as can be made out at present, only such as are calculated to afford a satisfactory service, and as a result although the line is a very long one, upwards all told of two thousand miles, a great part of it through a woody wilderness and consequently liable to constantly recurring interruptions, the business handled suffers no appreciable delay in transmission, the operators employed being sufficiently expert to keep it moving, as communication in times of line trouble happens to become re-established from point to point of the system.

As time goes on the liability of the line to interruptions should lessen, owing to its weaknesses being found and eliminated, and it ought soon to be practicable to reduce the number of linemen required to keep it in repair, in which case the maintenance outlay would be a good deal less than it is at present.

Traffic receipts.—For all that a reduction to two-thirds of the original through rates for messages, was made from June 1, 1902, the returns show an appreciable increase in the traffic and actual revenue as follows :—

12 months		Messages sent.	Revenue.*
July-June	1901-02..	33,136	$105,591 69
"	1902-03..	41,447	113,721 44

Supplementary Report.—An interesting report, with a very satisfactory showing, from the acting superintendent of the Yukon system, Mr. J. Y. Rochester, at Vancouver, will be found elsewhere in the following pages.

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* These are the actual figures for the period covered ; the amounts set down in the tabular statements of Revenue and expenditure elsewhere in these annual reports, comprehend only what was brought to account to the end of the fiscal year in each instance, without regard to whatever balances of the traffic receipts may have been left over for subsequent entries.

REVENUE AND EXPENDITURE.

The revenue and expenditure for each of the lines in the several districts hereinbefore mentioned are given in the following table :—

1903-04.	Expenditure.	Revenue.	Remarks.
	$ cts.	$ cts.	
Lower St. Lawrence and Maritime Provinces :—			
Anticosti lines *	7,930 09	1,690 78	
Bay of Fundy	1,676 15	675 25	
Cape Ray	250 00		
Escuminac	411 92	161 34	
Magdalen Islands	3,111 48	831 91	
Cape Breton lines	6,972 23	1,802 34	
North Shore (E.B.) †	17,341 83	3,579 08	
" (W.B.)	5,680 08	1,885 59	
Quarantine system	2,157 59	464 48	
Isle Coudres line	150 00		
Belle Isle-Chateau Bay :—			
Marconi system	188 71		
Cable ship *Tyrian* :—			
Maintenance and renewal of plant	23,348 63		
Subsidies, stationery, line and office material and contingencies	14,125 68		
Total for Lower St. Lawrence, &c.	83,444 39	11,090 77	
Ontario :—			
Pelee Island line ‡	2,301 52	35 20	
North-west Territories lines	19,938 62	4,916 94	
British Columbia—			
Alberni-Cape Beale	483 00	13 56	
Alberni-Clayoquot	3,888 42	265 73	
Golden-Windermere	3,622 75	589 10	
Kamloops-Nicola	1,364 32	672 70	
Nanaimo-Comox (including Alberni line)	3,725 23	2,452 33	
Vancouver-Salt Spring	264 62	29 08	
Victoria-Cape Beale	5,604 53	334 56	
B. C. service generally	749 07		
Yukon :—			
Ashcroft-Dawson	199,226 14	126,991 97	
Telegraph service generally	3,305 04		
Total	327,917 65	147,391 94	

Signal Service messages, Meteorological Service messages, reports and Fisheries bulletins are handled free of tolls.

*Of this $2,388.41 was for renewals.
† " $3,619.87 " roadways, &c.
‡ " $2,119.25 " cable repairs.
| " $752 62 " pole re-setting, &c.

TELEGRAPH SERVICE GENERALLY.

Cable Ship —The s.s. *Tyrian* in command of Captain T. O'Leary with Mr. R. G. Zwicker, chief engineer ; Mr. W. McConnell, pilot ; and the other officers and members of the crew for most part the same as last year, was got in readiness early in the season starting out from Halifax on March 26, (1904), under an engagement with the Direct U.S. Cable Company in the same way as in the month of December previous, as noted in last year's report, for the repair of a break in their cable off Shelburne, N.S.; and after a successful outing returned to port on May 4. She left again on the 18th of that month for the repair of the Magdalen Islands cable, being joined by Mr. A. B. Macdonald at Meat Cove who accompanied her in the capacity of electrician upon that occasion and subsequently throughout the season in connection with the

other repairs of which mention is made elsewhere in this report. The operations of the ship were expeditious and attended with great success and satisfaction.

Telegraph Systems of the Dominion.—As a matter of general interest the latest figures to hand showing the extent of telegraph lines in operation in the Dominion are given hereunder :—

Canada.	Length of lines in Miles.			Lengths of Conductors in Miles.			Number of offices.
	Aerial.	Underground.	Total.	Aerial.	Underground.	Total.	
Great North Western Telegraph Co.	18,286	.....	18,286	35,721	.....	35,721	1,455
Canadian Pacific Telegraphs	10,016	2	10,018	45,886	57	45,943	1,152
Western Union Telegraph Co.	2,756	28	2,784	13,025	44	13,069	221
Government Telegraph Service	6,270	.....	6,270	6,270	.....	6,270	327

DEPARTMENTAL TELEPHONE SERVICE.

At the end of June, 1904, the telephone connections with the central office of the Bell Telephone Company at Ottawa, listed as chargeable to the special appropriation, numbered 240 the annual charge for which amounts to $9,396.50. The connections are distributed amongst the several departments as hereunder :—

Department.	Offices.	Residences.	Annual charge.
			$ cts.
Agriculture	6	3	360 00
Auditor General	2	1	115 00
Census Branch	2	2	163 00
Customs	5	2	275 00
Dominion Police	6	2	313 00
Exchequer Court	1	1	85 00
Finance	3	2	203 00
Governor General	4	3	308 00
Houses of Commons	13	3	607 50
Indian Affairs	2	1	110 00
Inland Revenue	4	5	380 00
Interior (including line to observatory)	23	3	980 00
Geological Survey	2	1	110 00
Justice	5	10	570 00
Labour Department	1	..	50 00
Mounted Police	3	1	145 00
Marine and Fisheries	8	5	483 00
Militia and Defence	11	8	734 00
Parliamentary Library	1	2	120 00
Privy Council	3	5	325 00
Post office Department	6	4	380 00
Public Works	26	13	1,640 00
Printing and Stationery	3	2	175 00
Railways and Canals	3	4	265 00
Secretary of State	3	2	180 00
Senate	3	1	140 00
Trade and Commerce	2	3	180 00
	151	89	9,396 50

APPENDED TABLES.

The usual tabular statements of the lines and offices, staff, &c., of the telegraph service, following hereupon, will be found to contain whatever additions or changes have been made up to June 30, 1904.

D. H. KEELEY,
General Superintendent.

OTTAWA, December 9, 1904.

DOMINION TELEGRAPH SERVICE.

Newfoundland Telegraph Service.

No.	Stations.	Intermediate Distance.	Agent and Operator.	Memo.
		Miles.	$ cts.	
1	Port au Basque	0	50 00 on commission	N.B.—The commission is 25 per cent upon all business to and from the office; said commission guaranted not to be less than at the rate of $50 per annum.
2	Cape Ray Lighthouse	14	50 00 "	
	Totals	14	100 00	

N.B.—The above short line is constructed in connection with the Signal Service, and connects at Port au Basque with the land line system of the Anglo-American Telegraph Company.

GOVERNMENT TELEGRAPH SERVICE—*Continued.*

ANTICOSTI TELEGRAPH SYSTEM.

No.	Stations.	Intermediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		$ cts.		
1	Fox Bay	0	Geo. Cabot	300 00	May 13, 1900	Increased from $200 since December 1902.
2	Heath Point	23	A. Tremblay	50 00 or commission.	Aug. 1, 1900	For local agency.
				200 00 "	Nov. 1, 1902	For cable repeating station.
3	South Point Lighthouse	32½	E. Leprise	50 00 "	July 1, 1903	
4	Shallop Creek	17½	B. Bradley	240 00 "	" 7, 1881	
5	Salt Lake	52½	A. Allard, agt. repairer	360 00 "	June 1, 1903	Plus $1 per day when on duty as general repairer.
6	South-west Pt. Lighthouse	15	A. Z. Lemieux	420 00 "	" 1, 1901	Increase from $300 since May 1903.
....	Jupiter River	7		50 00 "		
....	Otter River	17½		50 00 "		
....	Beescie River	22		50 00 "		
....	Cape Eagle (Ellis Bay)	10		50 00 "		
7	West Point Lighthouse	9	A. Malouin, dist. supt.	344 00 per annum	Aug. 1, 1900	
			" operator	50 00 "	" 10, 1881	
8	English Bay	3	F. Cabot	120 00 and commission	July 1, 1882	
....	Mechastic Bay (cable landing)	14½				
	Totals	223¼		2,334 00		

South-west Point connects with l'Anse à Fougère, Gaspé, by cable 44¼ knots; and from Mechastic Bay connection is made with Long Point of Mingan by cable 21 knots.

0	L'Anse à Fougère		Thos. Dupuis	17 00		Special allowance for the cable terminus. A testing station only*.
1	Gaspé Basin	28	J. J. Annett	540 00	Oct. 16, 1881	Transfer office. Connection with G.N.W. telegraph system. The salary was $420 per year previous to December 1, 1903.
		28		557 00		

*This payment was made to Mr. N. Bernier prior to October, 1903.

MAGDALEN ISLANDS SYSTEM.

Magdalen Islands Section.

1	Amherst	0	Miss J. Shea	50 00	or commission	Oct.	1, 1882	The commission is 25 per cent on all business to and from the office in each instance; said commission guaranteed to be not less than at the rate of $50 per annum.
2	Amherst Lighthouse	9	Wm. Cormier	50 00	"	June	11, 1881	
3	Etang du Nord village	15	J.G. Binet, gen. repairer	460 00	"	Dec.	1, 1900	Plus $1 per day when absent on duty.
			Mrs. A. Binet	50 00	"	"	1, 1881	
4	Etang du Nord Lighthouse	1	N. Arseneault	50 00	"	Sept.	1, 1891	Two-wire loop line.
5	Grindstone Island	5	W. Leslie	Commission 25 p.c.		May	20, 1897	
6	Grindstone West	.....	A. LeBourdais, dis supt	720 00		Aug.	17, 1880	Plus $1 per day when absent on duty. The salary was $600 per annum pior to May 1, 1904.
			Mrs. LeBourdais, oper.	50 00		Sept.	15, 1893	
7	House Harbour (½ knot cable)*	3	Camille Delaney	50 00	or commission	June	1, 1903	
8	Wolfe Island	28½	.....	.....		.....		
9	Grosse Isle	11	N. Clark	360 00	or commission	June	1, 1888	For repeating station. Prior to Dec. 1, '02 the allowance was $200 and commission for local agency.
			J. Quinn	50 00	"	Dec.	1, 1902	
10	Grand Entry	11	Mrs. F. Atkins	50 00	"	Feb.	18, 1882	
		83½		1,880 00				
11	*Point Bass—2 Wire loop from House Harbour	4	H. Arseneau	50 00	or commission	Aug.	1, 1902	
12	Bryon Island	1	W. Dingwell	150 00		Jan.	1, 1903	Two-wire loop line from terminal hut for Grosse Isle and Anticosti cables.

Grosse Isle connects at Old Harry with Meat Cove, C.B., by cable 55 knots; and connects with Bryon Island by cable 11 knots; thence to Heath Point Anticosti 93 knots.

GOVERNMENT TELEGRAPH SERVICE—*Continued.*

CAPE BRETON SECTION.

No.	Stations.	Intermediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		$ cts.		
1*	Meat Cove (cable station)		A. B. McDonal, Circuit Manager	720 00	Nov. 7, 1880	The commission is 25 p.c. on all business to and from the office in each instance; said commission guaranteed to be not less than at the rate of $50 per annum.
2	Aspy Bay	10½	I. Y. Nichols	50 00 or commission	Juiy 1, 1894.	
3	Dingwall (loop line)	3¾ / 2¾	Murdock McLeod	50 00 "	Aug. 31, 1898.	The loop line formerly running to White Point has been withdrawn
4	Cape North (Inland)	3	John McDonald	50 00 "	May 13, 1904.	
5	Neil's Harbour (half-way house loop line)	11 / 1¾	M. McLeod	50 00 "	April 1, 1887.	
6	Ingonish North Bay	9	Mrs. S. S. Burke	50 00 "	June 1, 1884.	Former Agent J. M. Burke deceased.
7	South Ingonish	10½	Geo. Brewer	50 00 "	May 7, 1899.	
8	Ingonish Ferry	2	G. H. Hackett	50 00 "	June 29, 1903.	
9	French River ¼ knot cable	21	John McDonald	50 00 "	April 1, 1899.	
10	Indian Brook	5	Annie McDonald	50 00 "	Aug. 1, 1901.	
11	Murray (loop line)	14 / 10	R. B. Matheson	25 p.c. R & Cks	Jan. 20, 1902.	25 per cent commission only.
12	Englishtown ¼ knot cable	7	W. Bingham	120 00 and commiss.	July 19, 1882.	Switching point for Baddeck line.
	South Gut, St. Ann's (on loop)	5		50 00 "		Closed December 31, 1899.
13	Baddeck (on loop)	13	L. M. Anderson	100 00 "	June 17, 1904.	Salary.—$120 per year previous to this appointment. Former Agent Mr. L. M. Anderson.
	Englishtown (back on loop)	18				This loop to Baddeck starts from and returns to Englishtown.
14	Kelley's Cove, N. Campbelton	6	J. S. Burchell	50 00 or commission	July 7, 1904.	
15	Big Bras d'Or ¼ knot cable	2½	Mrs. E. Livingston	50 00 "	Jan. 1, 1889.	
16	North Sydney	12½	W. U. Tel. Co.	Commis'n only		The commission is 50 p.c. on local business and 25 p.c. on through messages; and covers supervision of line and office accommodation at North Sydney.
	Repairers' Sections.					
	Meat Cove—Sugar Loaf		M. McAskill	80 00	April 1, 1898.	
	Sugar Loaf—Ingonish		Charles Smith	100 00	" 1, 1898.	Increased from $80 since June 1, 1903.
	Ingonish—Englishtown		R. A. McDonald	80 00	" 1, 1898.	
	Englishtown—Baddeck				" 1, 1898.	This section attended to on occasion by locally employed labour since July 1, 1902.
	Englishtown—N. Sydney		Dan Campbell	100 00	July 14, 1903.	
	Murray—Indian Brook		John Smith	25 00	June 17, 1902.	
	Ingonish		S. S. Burke, gen. repr	420 00	April 1, 1904.	Payment includes horseshire.
	Totals	168½		2,345 00		

Meat Cove station connects with the Magdalen Islands system by a cable to Old Harry Head, 55 knots, and with St. Paul's Island by a cable of 20 knots. The latter is operated with telephones.

1	St. Paul's Island	3	S. C. Campbell	50 00		Oct. 1, 1890.	Land wire across the island, Atlantic Cove to Trinity Cove.

MABOU-CHETICAMP AND MEAT COVE, C.B., TELEGRAPH SYSTEM.

1	Mabou	0	Mrs. M. McDonald	120 00	per annum	April 1, 1887.	The commission is 25 p.c of the Government line tolls, and is guaranteed to amount to not less than $50 per annum. Where 50 p.c. commission is paid there is no guarantee as to amount.
2	Inverness Town (Broad Cove)	20	Miss Annie McLelland	50	p.c. Cks & Rts	Mar. 1, 1892.	
3	South-west Margaree	12	J. D. McFarlane	50 00	per annum	*Feb. 1, 1898.	
4	Margaree Harbour	5	H. K. McLean	50	p.c. R. & Cks	Oct. 20, 1896.	
5	North-east Margaree (loop line wire)	10	Mrs. J. D. Ross	50 00	or commission	Feb. 1, 1898.	
6	Grand Etang	8	G. Doucet	50 00	"	Sept. 13, 1902.	This office re-opened after having been closed since January 1899.
7	Cheticamp	8	Mrs. M. Fiset	100 00	"	" 1, 1887.	*At South-west Margaree the commission was 50 p.c. till Sept. 1, 1899.
8	Pleasant Bay	27	Mrs. D. Smith	50 00	"	April 14, 1900.	
9	Cape St. Lawrence	15	C. Jamieson	50 00	"	Jan. 1, 1904.	
	Meat Cove	4	See Meat Cove Line. D. C. Dawson, D. Supt.	150 00	"	Jan. 1, 1887.	
	Repairer's Sections—						
	Mabou—Strathlorne		L. G. McDougall	40 00	per annum	Nov. 3, 1902	
	Strathlorne—S. W. Margaree		J. D. McFarlane	40 00	"	June 4, 1902.	
	S. W. Margaree—Margaree Harbour		Alex. McFarlane, sr.	40 00	"	" 4, 1902.	
	Margaree Harbour—Grand Etang		H. K. McLean	25 00		" 1, 1903.	
	Grand Etang—Cheticamp		Philip La Rade	25 00	"	May 20, 1903.	
	Cheticamp—Barren		F. Aucoin	40 00	"	" 20, 1903.	
	Barren—Pleasant Bay		J. A. McLean	40 00	"	" 20, 1903.	
	Pleasant Bay—Polits Cove		K. Fraser	40 00	"	" 20, 1903.	
	Polits Cove—Halfway Shanty		E. Fraser	30 00	"	" 20, 1903.	
	Halfway Shanty—Meat Cove		R. Fraser	40 00	"	" 20, 1903.	
	General lineman		W. G. Smyth, Pt. Hood	420 00	"	July 1, 1903.	Salary covers horse-hire, &c.
	Totals	109		1,400 00			

GOVERNMENT TELEGRAPH SERVICE—*Continued.*

NORTH SYDNEY—MEAT COVE AND PORT HAWKESBURY SECTION.

No.	Stations.	Intermediate Distance.	Agents and Operators.	Salary per annum.	Date of Appointment.	Memo.
		Miles.		$ cts.		
	Mabou	0				(See Mabou. Meat Cove section.)
1	Port Hood	10	D. J. McDonald	50 00	" 1, 1903.	
2	Judique	10	Miss A. McPherson	50 00	" 1, 1903.	
3	Craignish	8	J. D. Cameron	50 00	" 1, 1903.	
4	Port Hastings	10	Miss M. McFarlane	50 00	" 1, 1903.	
5	Port Hawkesbury	3¾	Miss E. McDonald	120 00	" 1, 1903.	
6	River Bourgeois	26	Angus Boyd	50 00	" 1, 1903.	
7	St. Peters	6	D. Morrison	100 00	Nov. 1, 1903.	Main Battery at St. Peters.
8	Lower Lardois (½ mile loop)	10	M. Bremner	50 00	" 1, 1903.	
9	Grand River	5¾	Miss Jessie Finlayson	50 00	" 1, 1903.	
10	Fourchu	5	Miss May Hardy	50 00	" 1, 1903.	
11	Gabarous (3 mile loop)	5	Miss C. Grant	180 00	Jan. 16, 1904.	Repeating office.
12	Louisburg	4	Wesley Townsend	50 00	Feb. 1, 1904.	
13	Main à Dieu	10	Miss Maud Dickson	50 00	June 1, 1904.	$50 additional to Main à Dieu agency for care of main battery.
	To cable landing	1				
	Cable across channel	1¾	E. E. Pope	50 00	Aug. 15, 1904.	
14	Scatarie Island (Western Light)		J. T. Martel	50 00	" 1, 1904.	
15	" (Eastern Light)	7½				
	General lineman Port Hawkesbury and Meat Cove Section		Wm. J. Smyth			(See Mabou. Meat Cove section.)
	Branch.					
	Gabarous Junction (wire only, 3 miles) Marion Bridge Perry Lewis Leitche's Creek North Sydney	35½	No appointments, only the terminal offices in operation.			This line was opened for business Dec. 11, 1903.
	Totals	199		930 00		

North Sydney transfer office, connection with W. U. Telegraph system.

NOVA SCOTIA TELEGRAPH SYSTEM.

Cape Sable Section.

1	Barrington	0					This line has been leased to the Barrington Telephone Company from August 12, 1897. The lease is terminable at any time.
2	Newellton (including 1½ knots cable)	11					
3	Cape Sable Island light-house (including ¼ mile cable)	6¾					
	Totals	17¾					

East Coast Section.

N.B.—In connection with the Signal Service a land line, 208 miles in length, was erected in 1881, between Canso and Halifax, for a bonus of $16,000, and is maintained and operated by the Western Union Telegraph Company, without further cost to the Government.

BAY OF FUNDY, N.B., TELEGRAPH SYSTEM.

Grand Manan Section.

	Long Eddy Cable Hut to.						
1	Flagg's Cove	3	Mrs. C. C. Seely (D.Su.)	540 00	Nov.	18, 1880	*The commission is 25 p.c. on all business to and from the office in each instance; and commission guaranteed not to be less than at the rate of $50 per annum. When 50 p.c. commission is paid there is no guarantee as to amount.
	"		Miss V. A. McFarlane	50 00 or commission	Oct.	1, 1903	
	"		A. Gilmour, repairer	60 00	Dec.	1, 1894	
2	Castalia	2½	G. E. Dalzell	Commission 25 p.c	June*	1, 1898	
3	Woodward's Cove	3½	W. A. Fraser	" 50 p.c	Feb.	28, 1893	
4	Grand Harbour	2	J. L. Newton	75 00 or commission	April	1, 1887	$25 per annum is included for repeating Whitehead branch.
5	Seal Cove	4½	J. Ingersoll	50 00 "	Sept.	22, 1899	
6	Southern Head Lighthouse	5½	O. McLaughlin	Commission 25 p.c	April	24, 1897	Southern head office is now operated by telephone from Seal Cove.
	Branch Line.						
	Grand Harbour	0					
7	Cheney's Island (½ knot cable)	4¾	W. Cheney	" 25 p.c	Feb.	1, 1891	
8	Whitehead Island (¾ knot cable)	1½	Mrs. W. Cassaboom	50 00 or commission	"	1, 1903	
	Cable, Long Eddy to Liberty Cove	7¼					
	Liberty Cove Cable Hut to.						
9	Welchpool	7½	Miss E. G. Vennell	210 00 and commission	Sept.	1, 1895	
	Cable across channel	1½					
10	Eastport, Maine U.S.A.	½	J. Cushing	200 00	Dec.	26, 1881	
	Totals	44¼		1,035 00			

GOVERNMENT TELEGRAPH SERVICE—*Continued.*

CHATHAM-ESCUMINAC, N.B., TELEGRAPH SYSTEM.

No.	Stations.	Intermediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		$ cts.		
1	Chatham	0	Great North-western Telegraph Co.	185 00		This amount is paid for supervision of the line and office accommodation at Chatham.
2	Black Brook	5½	M. McDougall	50 00 or commission	July 1, 1904	The commission is 25 p.c. of the Government line tariff receipts in each instance, and is guaranteed to amount to not less than $50 per annum.
3	Baie du Vin	15	Mrs. M. Williston	50 00 "	Mar. 1, 1885	
4	Lower Hardwicke	6	Mrs. M. Brimner	50 00 "	Aug. 1, 1891	
5	Ecuminac	3¾	D. Lewis	50 00 "	Sept. 1, 1885	
6	Point Ecuminac lighthouse	12	K. R. McLennan	50 00 "	Nov. 1, 1893	$12 per annum allowed for care of main battery at Point Escuminac.
	Totals	42		435 00		

GROSSE ISLE QUARANTINE TELEGRAPH SYSTEM.

1	Quebec	0	Great North-western Telegraph Co.	185 00		This amount is paid for supervision of the line, and covers rent of pole line from Quebec to L'Ange Gardien, for which $35 per annum is charged.
	L'Ange Gardien	13				
	Orleans Island (cable)	¾				
2	St. Pierre	4½	C. Turcott	50 00 or commission	Mar. 1, 1885	This commission is 25 p.c. of the Government line tariff in each instance, and guaranteed to amount to not less than $50 per annum.
3	Ste. Petronille	3½	M. Plante	50 00 "	April 7, 1896	
4	St. Laurent	6½	M. Gobeil	120 00 and 25 per cent commission	Sept. 15, 1888	
5	St. Jean	7	P. Pouliot	120 00 and 25 per cent commission 480 00 per year	July 1, 1888 May 1, 1902	For local agency. Chief operator and repairer.
6	St. François	6¾	O. Lemelin	50 00 or commission	" 15, 1900	
7	Isle Réaux (including 2 knots cable)	3¼				
	Isle Réaux (land line)	2½				
8	Grosse Isle quarantine office (including 2 knots cable)	3½	M. D. Masson	100 00 and 25 per cent commission	May 1, 1902	$4 per month for messenger serv. in summer, and $12 p. annum allowed for care of main batt. at Gr. Isle.
	Quarantine telephone system 2 wire line	1¾				NOTE. The telephone system on Grosse Isle since May, 1893, has comprised 1¾ miles of 2 wire line with 11 connections or stations.
	Totals	52¾		1,155 00		

	Loop Line (2 wires.)						
	St. Jean-St. Famille	5½	P. Letourneau	50 00 or commission	April	2, 1904	

CHICOUTIMI AND NORTH SHORE OF ST. LAWRENCE TELEGRAPH SYSTEM.

Chicoutimi Section.

1	Bay St. Paul		F. Boivin	180 00 per annum.. 25 p.c. commission	Previous to April	1, 1885	*The commission on business is 25 per cent of the Government tolls of the line; the amount guaranteed to be not less than $50 per annum.
2	St. Urbain	9	A. Boivin	50 00 or commissi'n*	"	1, 1885	
3	La Galette	37	A. Gauthier, repairer	210 00	May	15, 1887	
4	St. Alexis	37½	S. Ouellette	100 00	Aug.	25, 1902	
5	St. Alphonse de Bagotville	3	Mrs. D. Simard	50 00 or commission	Nov.	1, 1899	Plus $25 per year for operating branch line to L'Anse St. Jean.
6	Chicoutimi	11½	A. Simard	50 00 "	April	— 1885	
			G.N.W. Telegraph C.	25 p.c. commission	Nov.	— 1893	Plus $12 per annum for care of main battery.
			J. Fortin, repairer	420 00 per annum	June	1, 1897	J. Fortin's division includes the branch line to L'Anse St. Jean.
		98		1,060 00			
	Branch Line.						
	St. Alexis	0	Mrs. D. Simard				
7	St. Felix d'Otis	10	Rev. H. Neron	50 00	Nov.	1, 1903	
8	L'Anse St. Jean	30	J. Martel, repairer	210 00	May	1, 1904	
			R. Martel	50 00	Jan.	1, 1904	
9	Petite Saguenay	8	M. Tremblay	50 00	Sept.	1, 1903	
10	Anse Cheval	6	Price Bros	50 00	Nov.	1, 1903	
11	St. Etienne	7					
	St. Catharines Bay	17	G. Boulenne (see North Shore W. B. Line				
		78		410 00			
	Totals	176		1,470 00			

Murray Bay—St. Agnes Section.

	Murray Bay	0	Mrs. F. Vincent				(See Murray Bay, Bersimis section.)
1	St. Agnes	7½	Jos. Gaudreau	$50 00	Jan.	1, 1904	
2	Trinity (Guay)	7	Jos. Guay	50 00	Dec.	1, 1303	
		14½		100 00			
	Bay St. Paul	0	F. Boivin				(See Bay St. Paul. Chicoutimi section).
1	Petite River	13	J. Bouchard	50 00	Dec.	1, 1903	Payment at Bay St. Paul $25 per year and $12 for battery care, for operation of this branch to Petit River.
		13		50 00			

Connections for these lines with the G. N. W. Telegraph System are made at Chicoutimi, Bay St. Paul and Murray Bay.

GOVERNMENT TELEGRAPH SERVICE.—*Continued.*

CHICOUTIMI AND NORTH OF ST. LAWRENCE TELEGRAPH SYSTEM - *Continued.*

CHICOUTIMI SECTION—*Concluded.*

No.	Stations.	Intermediate Distance.	Agents and Operators.	Salaries per annum.	Date of Appointment.	Memo.
		Miles.		$ cts.		
1	St. Charles	0	B. Boucher	50 00	Sept. 1, 1903	
2	St. Ambroise	10	O. Grondin	50 00	" 1, 1903	
3	St. Leonard	7	Geo. Gagnon	50 00	" 1, 1903	
4	Shipshaw, North	6	J. Murdock	50 00	" 1, 1903	
5	Shipshaw	3	Aug. Dufore			
6	St. Anne	8	P. Gauthier	200 00	Aug. 1, 1903	
	Chicoutimi	3	G.N.W.Telegraph Co.			
		37		400 00		
	Branch Line.					
	St. Anne	0	P. Gauthier			(See St. Charles. Chicoutimi section.)
1	St. Fulgence	9	Rev. Geo. Gagnon	50 00	Jan. 1, 1904	
		9		50 00		
	St. Anne	0	P. Gauthier			
1	Range 9	3	Thos. Simard	50 00	Feb. 1, 1904	
2	Lac Charles	3	J. Bouliane	50 00	Jan. 1, 1904	
3	Lac Clair	9	Albert Dufore	50 00	" 1, 1904	
		15		150 00		

NORTH SHORE (West of Bersimis).

1	Murray Bay	0	Mrs. F. Vincent	50 00 or commission.	Previous to April 1, 1885	Plus $25 per year, and $12 for battery care for operation of branch to Guay.
2	Cap à l'Aigle	4	N. Duchesne	50 00 "	June 1, 1888	
3	St. Fidèle	6	A. N. Parent	50 00 "	April 1, 1890	
4	Port au Persil	7	A. Brassard	50 00 "	May 1, 1889	
			A. Brassard (repairer)	210 00 "	June 1, 1897	

5	St. Siméon	4	D. Gaudin	50 00 "	Dec. 1, 1887	
6	Baie des Rochers	12	G. Savard	50 00 "	June 1887	
7	St. Catharines Bay } Br. L.	17	G. Bouilenne	100 00 "	Nov. — 1886	
8	St. Etienne }		E. Bouilenne (rep'r).	210 00 "	Sept. 1, 1899	
9	Tadousac (1¼ knot cable)	13	J. E. Caron	50 00 "	Nov. 1, 1888	
10	Sacré Cœur Br. from Tadousac	12½	L. Maltais	50 00 "	Dec. 6, 1901	
11	Bergeronnes	15	M. Savard	50 00 "	April — 1885	
12	Escoumains	12	J. H. Topping	50 00 "	" — 1885	
13	Baie des Bacons	8	P. Bouchard		May 6, 1892	Commission at 25 per cent, without guarantee at Baie des Bacons.
14	Mille Vaches	8	J. A. Puise	50 00 or commission	April — 1885	
15	Hamilton Cove	11½	C. P. Easton		Sept. 1, 1903	Accommodation office.
16	Portneuf light	6	S. Bouchard	50 00 or commission	July 1, 1890	
			E. Courbron (rep'r)	420 00	April 1, 1888	
17	Sault au Cochon	7		50 00 or commission		Sault au Cochon closed September 30, 1896.
18	Bersimis	31	Mrs. A. Laurier, agt & op	500 00	Jan. 1, 1902	
			asst. opr.	180 00		
			E. Pope, dist. supt	600 00	April — 1885	
	* Totals	174		2,870 00		

* Note.—In the estimates the maintenance of the Chicoutimi and North Shore line is provided under head of North Shore Line. They are operated conjointly.

North Shore (East of Bersimis).

1	P'te aux Outardes (cable)	12	H. Tremblay	50 00 or commission	Dec. 1, 1896	
	P'te Paradis (Manicouagan) cable landing	18				The repeating office formerly at Manicouagan was removed to Bersimis in September, 1896.
2	Scougalls Mills 14 mile loop line from Pte Paradis	28	Accomodation	25 p.c. commission	Aug. — 1901	
3	River Godbout (cable)	26	N. A. Comeau	50 00 or commission	Oct. 15, 1885	
4	Pointe des Monts	18½	L. F. Faffard	50 00 "	Dec. 28, 1883	
5	Trinity Bay West	5¼	Z. Poulin	50 00 "	May 16, 1884	
6	Trinity Bay East	2½	A. Bilodeau	25 p.c. commission	" 1, 1889	
7	Caribou Islands	7	I. Comeau		Sept. 1, 1889	
8	Pointe aux Anglais	10½	Paul Côté	Accomodation office	Jan. 10, 1895	No commission is paid at this office.
9	Pentecost	6½	E. H. Tétu, D. Supt	1,080 00 per annum	Nov. 1, 1891	
			Mrs. E. H. Tétu, as. opr	300 00 "	" 1, 1903	
10	Ste. Marguerite	47½	A. Therriault	180 00 "	July 1, 1888	
11	Clark City	5	Accomodation office	25 p.c. commission	April 17, 1903	
12	Seven Islands	17¾	P. E. Vignault, opr.	180 00 per annum	Jan. 2, 1884	
			L. N. Caron	540 00 "	May 29, 1902	Plus 50 cents per day when absent on duty.
13	River Moisie	15½	J. Poirier	50 00 or commission	June 1, 1896	
14	Pigou	28	Mrs. Peter Wright, op	100 00 "	Oct 1, 1902	
			Peter Wright, repr	112 00 "	" 1, 1902	
15	Little River	29	Miss H. Leberge	50 00 "	" 10, 1900	
16	Sheldrake	15	A. LeBerge	50 00 "	" 1, 1897	
17	Thunder River	6½	Mrs. H. Cody	50 00 "	Feb. 1, 1890	
18	Magpie	14	Geo. Molloy	50 00 "	Oct. 1, 1889	
19	St. John's River	9	B. Chambers	50 00 "	" 1, 1889	

GOVERNMENT TELEGRAPH SERVICE—*Continued.*

CHICOUTIMI AND NORTH OF ST. LAWRENCE TELEGRAPH SYSTEM—*Continued.* NORTH SHORE (East of Bersimis).

No.	Stations.	Intermediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		$ cts.		
20	Long Point	10	A. Maloney	500 00 "	Sept. 21, 1896	Long Point is the repeating office for the Anticosti, cable in operation since September 1, 1891. The salary was increased from $360 since Nov. 1.
			Mrs. A. Maloney, as.op.	180 00 "	Nov. 1, 1900	
21	Mingan	7	M. J. Maloney	50 00 or commission	Oct. 1, 1889	
22	Point Esquimaux	24	Mrs. D. C. Hould	240 00 per annum	Sept. 1, 1897	Allowance for office rent $4 per month.
			Edwd. Cyr, inspr.	500 00 "	Nov. 2, 1902	Plus 50 cents per day when absent on duty.
23	Betchouanes	20	Alfd. Bodreau, repr.	112 00 "	Sept. 1, 1902	
			Mrs. A. Bodreau, opr.	100 00 "	" 1, 1902	
24	Piastre Bay	23	S. Tanguay, repr.	112 00 "	" 18, 1902	
			Mrs. J. Beetz, opr.	100 00 "	" 18, 1902	
25	Watichou	15	Mrs. Cl. Bourque, opr.	100 00 "	Dec. 1, 1903	This office was closed on withdrawal of former agent from Sept. 4, 1903, $12 rent to J. Beetz.
			John Bourque, repr.	100 00 "	" 1, 1903	
26	Aguanus	21¾	S. Galant, repr.	112 00 "	Sept. 3, 1902	
			Mrs. Galant, opr.	100 00 "	" 3, 1902	
27	Natashquan	21	C. Vignault, repr.	112 00 "	" 5, 1902	
			Miss Vignault, opr.	100 00 "	" 5, 1902	
28	Kegaska	33	Geo. Anderson, repr.	112 00 "	" 16, 1902	
			Miss Anderson, opr.	100 00 "	" 16, 1902	
			J. W. Osborne, inspr.	500 00 "	" 1, 1902	Plus 50 cents per day when absent on duty.
29	Masquaro	18	Wm. Foreman, opr & rep	212 00 "	June 1, 1903	
30	Romaine	25	M. Blais, repr.	112 00 "	Sept. 17, 1902	
			Miss R. Blais, opr.	100 00 "	" 17, 1902	
31	Wolf Bay	24	R. Jones, repr	112 00 "	Nov. 26, 1902	
			Miss R. Jones, opr.	100 00 "	" 26, 1902	
32	Pt. au Maurier	24	J. Galibois, repr.	112 00 "	Sept. 19, 1902	
			Miss P. Galibois, opr.	100 00 "	" 19, 1902	
33	Harrington	20	J. Jones, repr.	112 00 "	" 20, 1902	
			Mrs. Jones, opr.	100 00 "	" 20, 1902	
34	Whale Head	17	Nap. Nadeau, rep. & opr	212 00 "	Jan. 21, 1903	
35	Mutton Bay	20	Alf. Cormier, rep. & opr	444 00 "	June 1, 1902	
36	Bay de Ha	27				Not yet opened.
37	St. Augustine	27	G. W. Bargess, rep. & opr	212 00 per annum	Sept. 25, 1902	
38	Coxipi	24	Jos. Picard, repr & opr.	212 00 "	Dec. 16, 1902	
39	Rockey Bay	30	Miss B. E. Chevalier, o	100 00 "	April 20, 1904	This office was closed from Sept. 7, 1903, the former agent having left the place.
			L. O. Chevalier, repr	112 00 "	" 20, 1904	
40	St. Paul River	21	G. Chevalier, repr.	112 00 "	Oct. 2, 1902	
			Miss Chevalier, opr.	100 00 "	" 2, 1902	
41	Brador Bay	29	Johnny Jones, opr.	100 00 "	June 13, 1903	
			P. C. Vignault, inspr	500 00 "	Feb. 1, 1903	Plus 50 cents per day when absent on duty.

42	Blanc Sablon	6	Thos. Morel, repr & opr.	212 00	"	Oct. 1, 1902	
43	Forteau Bay	13	A. Hart, repr & opr	212 00	"	July 19, 1902	
44	Pointe Amour	17	Thos. Whyat, repr & opr	112 00	"	Feb. 17, 1903	
45	Western Modiste	16	Jas. Bolger, repr & opr.	212 00	"	Oct. 5, 1902	
46	Red Bay	18	Geo. Moore, repr	112 00	"	" 9, 1902	
			Miss Moore, opr	100 00	"	" 9, 1902	
47	Chateau Bay	30	J. Maloney, opr & insp	500 00	"	Sept. 1, 1902	
			Miss Buckel, asst opr.	180 00	"	Dec. 1, 1902	
			J. McCarthy, local rpr	100 00	"	Nov. 1, 1903	
48	Belle Isle	23¾	J. C. Colton, opr	360 00	"	Sept. 14, 1901	
	Totals	916		11,486 00			

ONTARIO—PELEE ISLAND TELEGRAPH SERVICE.

1	Leamington		J. McR. Selkirk, D. Supt	50 00		Nov. 1, 1888	
2	" Dock	2	F. Deslauriers	Accommodation office		" 1, 1895	
3	Club House	5	C. Harrison	Commission 25 p. c.		April 1, 1889	The commission is on the tolls for the Government line.
4	Point Pelee	5	W. A. Grub	" "		Nov. 1, 1888	
	Leamington Dock to North Point Cable	17					The cable formerly 9½ knots from Point Pelee to the Island is now laid as here indicated 17 knots. The change was effected in August, 1901.
5	North Point Lighthouse	1	J. R. Ledwell	Commission 25 p. c.		June 1, 1899	
6	North Dock	2	C. B. Quick	" "		Nov. 1, 1888	
7	McIntyre's Corner	2½	Mrs. A. McIntyre	" "		" 1, 1896	
8	West Dock	2½	A. M. McCormick	" "		" 9, 1888	
9	South Dock	5½	T. W. Ferguson	" "		July 1, 1900	
	Totals	42½		50 00			

NOTE.—This line is operated with telephones.

GOVERNMENT TELEGRAPH SERVICE *Continued.*

LINES IN THE NORT-WEST TERRITORIES.

No.	Stations.	Inter-mediate Distance.	Agents.	Salaries per Annum.	Date of Appointment.	Memo.
	Qu'Appelle-Edmonton Sec.	Miles.		$ cts.		
1	Qu'Appelle	0	J. S. Macdonald, D. Supt. C. P. R. Tel. Co J. W. Wilson, lineman	1,800 00 420 00 500 00	Jan. 1, 1898 Dec. 1, 1896 March 1, 1902	Salary increased from $1,200 since November 1, 1903. The agent-operator at Qu'Appelle is joint with the C. P. R. Salary increased from $360, since November 1, 1903.
2	Fort Qu'Appelle	17	Miss E. Johnston	600 00	" 1, 1885	
3	Touchwood	46	A. VonLindeburg	720 00	Nov. 1, 1883	
4	Humbolt	78	H. J. MacDonald		Sept. 1, 1904	Salary increased from $600, since Nov. 1, 1903.
5	Saskatoon (14 miles loop)	69	C. P. R. Tel. Co T. G. Clement	300 00 600 00	Jan. 1, 1892 Oct. 1, 1903	The agt.-operator at Saskatoon is joint with the C.P.R.
6	Henrietta	52			" 1, 1886	
7	Battleford	47	W. Salisbury D. Noel	720 00 720 00	April 15, 1890 Oct. 1, 1900	
8	Bresaylor	27	T. J. Callahan	720 00	Dec. 1, 1900	Transferred from Bresaylor, 1st Sept. 1904.
	Pitt	62				" Batleford " Closed since October 1898. Office temporarily opened May 1,
9	Lloydminster loop (2 wires)	22	E. McCleneghan	600 00	April 18, 1904	till Aug. 6, 1904 for Immigration Dept.
10	Onion Lake	13	H. McCleneghan	720 00	Oct. 1, 1900	Salary increased from $600, since Nov. 1, 1903.
11	Moose	32½	G. G. Mann	720 00	Aug. 1, 1902	" " "
12	St. Paul de Metis	32	M. Therien	600 00	Dec. 1, 1899	" " $360 "
13	Saddle Lake	13	J. W. Carroll	720 00	Sept. 1, 1900	A telephone line extends from the office at Saddle Lake to the Indus'l School 6½ miles. Sl'ry inc'sd from $600 since Nov. 1, 1903.
14	Andrew Loop (2 wires)	4½	A. K. Morrison	600 00	June 7, 1904	
15	Victoria	37	J. C. Gordon	720 00	April 1, 1899	Salary increased from $600, since Nov. 1, 1903.
16	Star	6	E. A. Holmes	600 00	Aug. 2, 1904	
17	Ft. Saskatchewan	43	A. W. M. Campbell	600 00	Oct. 1, 1898	
18	Edmonton	24	T. J. McNamara W. McKay, lineman	720 00 720 00	" 1, 1901 May 1, 1886	Salary increased from $360, from Aug. 1, 1904. The office at Edmonton has been operated jointly with the C. P. R. Tel. Co. since Jan. 1, 1892.
19	Arthabaska Landing	98	Jas. McKernan	600 00	Oct. 1, 1904	
	Totals	723		15,020 00		

	Branch Line.						
—	Edmonton	0	In operation prior to 1895				This branch line operated by the Edmonton District Telephone Co.
20	St. Albert	9					
21	River Qui Barre	21	This section built in 1903				
22	Alexandria	6					
		36					
	Edmonton	0					This branch is operated as a telephone line. Construction completed October 1904.
	Indian Agency	14					
	Spruce Grove	5					
		19					
	Wood Mountain Section.						
1	Moosejaw	0	C. P. Tel., agent	240 00	Dec.	1, 1891.	Moosejaw office is operated jointly with the Canadian Pacific Telegraph Co.
			H. Sikes, repairer	600 00	"	1, 1893.	
2	Wood Mountain	90½	J. H. Thompson, agent	600 00	"	1, 1890.	
3	Willow Branch	38	H. A. Noel, agent	600 00	Oct.	19, 1904.	
	Duck Lake Section.	128½		2,040 00			
1	Batoche	0	D. H. Grant	120 00	"	1, 1902.	
2	Duck Dake	9	A. H. Gordon	120 00	Feb.	1, 1903.	
3	Indian Agency	3½					Telephone connection.
		12½		240 00			

BRITISH COLUMBIA.

No.	Offices.	Intermediate Distance.	Agents, &c.	Positions	Salaries per Annum.	Date of Appointment.	Memo.
	Kamloops—Lower Nicola.	Miles.			$ cts.		
	Telephone Line.		(See note in margin)				NOTE.—This line is operated under the superintendence of the resident engineer at Victoria, and for conversations 25c. for 5 minutes, half that rate for each additional 5 minutes or fraction thereof.
1	Kamloops	0	C. S. Stevens'	Agt. opr.	300 00	June 1, 1904.	
			Prov. Govt. Office	Lessee		July 1901	NOTE.—The lessees pay a monthly rent for the connections, and are allowed 25 per cent commission on local tolls for messages and conversations of non-subscribers.
2	Anderson Creek	12	W. McLeod	"		" 1901	
3	Nicola Valley		W. R. McDonald	"		" 1901	
4	Stumps Lake	13	Thos. Bullman	"		" 1901	
5	Beaver Ranch		J. W. Moor	"		" 1901	
6	Quelchena	20	E. O'Rourk	"		May 1900	Three additional connections in July 1901.
7	Nicola Lake	9	A. E. House	"		" 1900	Add at Nicola Lake, July 1, or Government Office, Dr. Sutton, A. R. Carrington.
8	Coutlee		Blair & Co	"		July 1901	
9	Lower Nicola	13	G. Armstrong	"		May 1900	
	Total	67					

GOVERNMENT TELEGRAPH SERVICE—*Continued.*

BRITISH COLUMBIA—*Continued.*

No.	Offices.	Intermediate Distance.	Agents, &c.	Positions.	Salaries per Annum.	Date of Appointment.	Memo.
	Nanaimo-Comox.	Miles.			$ cts.		
1	Nanaimo	0	W. F. Archibald.	Agent and operator.	306 00	Mar. 1, 1896	The amount comprises $20 per month for agency and operation, $3 for messenger service and $2.50 for battery care.
			A. M. Oliver, joint with C.P.R.	Assistant operator	120 00	June 1, 1902	
2	Wellington	5	E. & N. Ry. Co.	Agent and operator.	Commiss.	April 1, 1893	
3	Parksville	23	Mrs. R Williams.	" "	360 00	Dec. 1, 1897	
			W. Mills.	Lineman	360 00	June 1, 1903	Parksville, Quellicum section.
4	Union Bay	32¼	Miss E. McDonald	Agent and operator.	360 00	" 3, 1898	
			Thos. Hudson.	Lineman	780 00	Nov. 17, 1898	
5	Union Mines		J. Dunsmuir.	Accommodat'n office.			See mention of this in body of report (1897-98).
6	Cumberland	10	Albert Peacy	Agent and operator.	120 00 com. 25 p.c.	Apr. 28, 1898	
7	Courtney	7					Courtney and Comox communicated by telephone at prearranged intervals.
8	Comox	3¾	M. McDonald	Agent and operator.	360 00	Nov. 1, 1895	
	Total.	81			2,766 00		
							NOTE.—The repairs of this line has been done jointly with the Can. Pac. Telegraph since December 1, 1902.
	Parksville, Alberni and Cape Beale Line.						
	Parksville	0	(See above)				
1	Alberni	29½	Mrs. P. A. Haslam	Agent and operator.	240 00	Oct. 1, 1899	Proportion of salary for Comox line included.
2	Cape Beale	57	M. Patterson	" "	240 00	May 1, 1900	Proportion of salary for this line.
		86½			480 00		
	Alberni-Clayoquot Line.						
1	Alberni	0	P. A. Haslam.	Agent and operator.	120 00	Dec. 1, 1902	Proportion for this line.
2	New Alberni	2	E. B. Gerrard	Agent lineman	660 00	" 1, 1902	Section extends from Franklin Creek to Pipestem Inlet, post office address, New Alberni.
			E. A. Waterhand	Agent and operator.	Com. 25 p.c.	Oct. 1, 1903	
	Franklin Creek ½ mile cable.	8					Line crosses canal at this point by submarine cable.
3	Ucluelet	20½	W. L. Thompson	Agent lineman	720 00	Dec. 1, 1902	
			H. J. Hillier	Lineman	660 00	" 1, 1902	

4	Clayoquot	66¼	E. S. Reeve	Agent lineman	720 00	" 1, 1902	
	Stubbs Island			Accommodat'n office.			Private cable connection for local firm.
	Totals	96¾			2,880 00		
	Golden Windermere Line.						
1	Wilmer	0	R. A. Power	Agent and lineman	720 00	Jan. 1, 1902	
2	Athalmer	5	Telephone Connt'n				Operated from Windermere, Wilmer and Spillimacheen.
3	Windermere	5	" "				" Spillimacheen " "
4	Spillimacheen	16	V. F. Dunn	Agent and lineman.	900 00	Jan. 1, 1902	Local superintendency.
			Telep. Connect'n.				Operated from Windermere, Wilmer and Athalmer.
5	Golden	66	R. N. Young	Agent and operator.	300 00	Mar. 1, 1902	Joint agent with C. P. Tel.
	Totals	92			1,920 00		

GOVERNMENT TELEGRAPH SERVICE—*Concluded.*

BRITISH COLUMBIA—*Concluded.*

No.	Stations.	Intermediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
	Victoria Cape Beale.	Miles.		$ cts.		
			(See note in margin)			NOTE.—The superintendence of this line has been in the hands of the resident engineer at Victoria since October, 1901, when the arrangement theretofore in operation with the C. P. Ry. Co. was terminated.
1	Victoria	0	E. Houghton, oper. (C.P.Tel.)	200 00	Nov. 1, 1891.	Proportion of salary.
	Sooke	18				
2	Otter Point	8	E. Gordon, agt. and operator	720 00	Dec. 1, 1891.	
3	Jordan River (Shirley)	10	Percy Clark	540 00	" 1, 1903.	
4	Port San Juan (Port Renfrew)	30	E. C. Williams	240 00	Sept. 22, 1903.	
			W. G. H. Ellison, repairer	520 00	" 22, 1903.	
5	Carmanah Lighthouse (Clo-oose 2 miles west)	24	W. P. Daykin, repairer	240 00	Nov. 1, 1891.	
			D. Logan, repairer	540 00	April 1, 1898.	
			Otto Rosander, repairer	540 00	Mar. 6, 1901.	
6	Cape Beale	28	M. Patterson, agt. & operator	120 00	Sept. 1, 1899.	
	Totals	118		3,660 00		
	Vancouver—Salt Springs Line.					
1	Duncan Station	9	E. & N. Ry. Co.	Accommodation.	Mar. 1, 1902.	
2	Maple Bay	3	Wm. Beaumont	"	" 1, 1902.	
3	Sanson Narrows to Salt Springs (cable)	0¾				
4	Edwards' Store	3	Edwards & Co	Accommodation.	" 1, 1902.	
5	Ganges Harbour	9		"	" 1, 1904.	
	Totals	24¾				

There have been no staff appointments on this line, it being worked by telephone for the present merely for general convenience, and looked after by the persons directly interested.

SESSIONAL PAPER No. 19

GOVERNMENT TELEGRAPH SERVICE.

YUKON LINES.

NAMES of employees and monthly salaries, &c., Yukon Telegraph Service, which includes Port Simpson, Barkerville, Quesnelle and Lillooet branches.

(Compiled from pay sheets of June and July 1904.)

Number.	Office.	Intermediate Distance.	Positions.	Salaries per Month.	Tariff.	Night Rate.
				$ cts.	$ cts.	
1	Ashcroft		C. E. Gooding, manager	60 00		
			H. B. Rochester, operator	42 00		
			G. L. Hall, operator	45 00		
			T. R. Clark "	45 00		
			G. H. Dean "	45 00		
			S. Pritchard, lineman	75 00		
			P. R. Quain, Dist. Supt. Clerk	83 33		
			J. T. Phelan "	175 00		
2	Pavilion	40	F. C. Schanz, operator	60 00	25 and 2	25 and 1
3	Lillooet	22	S. A. MacFarlane, opr. & linem	60 00	25 " 2	25 " 1
4	Cash Creek*	4	Accommodation office, lineman	50 p. c. com.	25 " 2	25 " 1
5	Clinton	26	A. LeBourdais " "	60 00	25 " 2	25 " 1
6	115 Mile House	55	S. Hannah " "	60 00	25 " 2	25 " 1
7	150 "	35	T. S. Hall " "	60 00	50 " 3	30 " 2
8	Harpers Camp†	33	S. H. Patenaude " "	40 00	50 " 3	30 " 2
9	Bullion†	27			50 " 3	
10	Quesnel Forks†	4	O. Landry office, lineman	66 66	50 " 3	30 " 2
11	Soda Creek	42	C. H. Smith " "	60 00	50 " 3	30 " 2
12	Alexandria	28	G. A. Broughton office, lineman	60 00	50 " 3	30 " 2
13	Quesnel	26	T. F. Murphy, operator	60 00	50 " 3	30 " 2
			O. Earley, lineman	60 00	50 " 3	
			J. Mooney "	$3 per day	50 " 3	
14	Lafontaine‡	46	Cariboo Consolidated Co	50 p. c. com.	50 " 3	
15	Barkerville‡	15	J. Stone, operator and lineman	60 00	50 " 3	
16	Blackwater	53	J. McNeill " "	70 00	75 " 5	
17	Bobtail Lake	45	J. W. Howison, operator	75 00	75 " 5	
			J. A. Holder, lineman	70 00	75 " 5	
18	Stoney Creek	35	W. F. Manson, operator	75 00	75 " 5	
			J. D. Charleson, lineman	70 00	75 " 5	
19	Fraser Lake	35	G. N. Proctor, operator	75 00	75 " 5	
			M. McNevin, lineman	70 00	75 " 5	
20	Burns Lake	69	W. Heinz, operator	75 00	75 " 5	
			B. Lashbrook, lineman	70 00	75 " 5	
21	South Backley	30	N. McInnis, operator	75 00	75 " 5	
			E. Barrett, lineman	70 00		
22	North Backley	25			100 " 7	
23	Buckley Roach	27	L. Broughton, operator	75 00	100 " 7	
			H. Fink, lineman	70 00		
24	Morricetown	35	T. F. Cowan, operator	75 00	125 " 10	
			W. J. Toneri, lineman	70 00		
25	Hazleton	40	G. M. Swan, operator	100 00	125 " 10	
			E. R. Cox, lineman	100 00		
			J. C. K. Seeley, lineman	75 00		
			E. E. Charleson, for'man storekr	150 00		
26	Meanskinisht§	35	E. Tomlinson, operator	50 00	125 " 10	
			R. Tomlinson, lineman	75 00	125 " 10	
27	Skeena Canyon§	47	A. Daoust, operator	75 00		
			C. Durham, lineman	70 00		
			F. Dresser "	70 00		
28	Lorn Creek§	24	A. J. West, operator	75 00	125 " 10	
			J. D. McIntosh, lineman	75 00		
29	Telegraph Point§	53	W. J. O'Neill, operator	75 00	150 " 10	
			C. Peterson, lineman	70 00		
30	Aberdeen§	4½	G. Coutu, operator	75 00	150 " 10	
			B. F. St. Amour, lineman	70 00		

*Br. from Ashcroft. †Br. from 150 Mile House. ‡Br. from Quesnelle. §Br. from Hazleton.

GOVERNMENT TELEGRAPH SERVICE—*Continued.*

NAMES of employees and monthly salaries, &c., Yukon Telegraph Service, &c.—*Con.*

YUKON LINES—*Continued.*

Number.	Office.	Intermediate Distance.	Positions.	Salaries per Month.	Tariff.	Night Rate.
				$ cts.	$ cts.	
31	Port Simpson§	39	M. W. O'Neill, operator	50 00	150 " 10	
32	1st Cabin	27	H. A. Cullon "	75 00	125 " 10	
			Hugh Taylor, lineman	70 00		
33	Kuldo	28	G. T. Carpenter "	70 00		
			G. W. Smith "	70 00		
34	3rd Cabin	25	Chas. Martin, operator	75 00		
35	4th Cabin	20	P. Burnell "	75 00		
			J. McMenamin, lineman	70 00		
36	5th Cabin	20	E. A. Hawley, operator	100 00		
			C. E. Loucks, lineman	$3 per day		
37	6th Cabin	20	G. T. Brown, operator	100 00		
			W. Ross, lineman	$3 per day		
38	7th Cabin	19	J. A. Armstrong, operator	100 00		
			L. Dubois, lineman	$3 per day		
39	8th Cabin	19	J. Muir, operator	100 00		
			G. Duhamel, lineman	$3 per day		
40	9th Cabin	17	T. E. Harkin, operator	100 00		
			G. Hill, lineman	$3 per day		
41	Echo Lake	32	J. Patterson, operator	100 00	150 and 10	
			F. N. Jackson, lineman	$3 per day		
42	25-Mile Cabin	25	Jas. Murie, operator	100 00		
			J. W. Hovey, lineman	$3 per day		
43	Iskoot	16	J. W. Watts, operator	100 00	150 " 10	
			J. Lonery, lineman	$3 per day		
44	Telegraph Creek	61	A. S. Gillespie, operator	100 00	175 " 10	
			W. S. Simpson, lineman	75 00		
			A. J. Charleson, storekeeper	150 00		
45	Shesley	45	A. Johnson, operator	82 50	175 " 10	
			J. Craig, lineman	75 00		
46	Nahlin	61	S. G. Lawrence	82 50	185 " 10	
			R. Mckay, lineman	75 00		
47	Nakina	49	R. P. Hall, operator	82 50	185 " 10	
			J. Huston, lineman	75 00		
48	Pike River	40	Geo. Coutts, operator	82 50	200 " 15	
			J. A. Thorne, lineman	$3 per day		
49	Graveyard Point		S. W. Dobie, operator	75 00		
			J. D. Wells, lineman	70 00		
			A. E. Johnston, lineman	70 00		
50	Atlin	23	F. W. Dowling, day operator	116 66	200 " 15	
			A. B. Taylor, night operator	100 00		
			H. D. Gagné, foreman	125 00		
51	Center Cabin	35	J. Stronach	82 50		
52	Tagish	40	M. R. Grimes, operator	82 50	225 " 15	
53	Cariboo Crossing	18	Adam Dickson, lineman	75 00	225 " 15	
54	Whitehorse	65	A. B. Clegg, dist. supt	175 00	250 " 15	
			H. Gilchen, store-keeper	150 00		
			J. P. Champagne, clerk	112 50		
			G. S. Flemming, operator	115 00		
			G. W. Marshall, lineman	75 00		
			Mrs. Jefferies, house kpr & cook	75 00		
			Bruce Watson, messenger	35 00		
55	Lower Leberge	59	D. Potts, operator	82 50	250 " 15	
			J. H. Brown, lineman	75 00		
56	Hootalinqua	30	J. W. Graham, operator	82 50	250 " 15	
57	Big Salmon	34	H. O. Lakkin, lineman	75 00	250 " 15	
58	Five Fingers	96	W. S. Langtree, operator	82 50	275 " 15	
59	Yukon Crossing	8	J. Hope	82 50		
60	Fort Silkirk	50	E. K. Waller, operator	82 50	275 " 15	
61	Selwyn	30	J. W. Wilson, operator	82 50	275 " 15	
62	Stewart River	75	Chas. N. Graham, operator	82 50	300 " 20	

SESSIONAL PAPER No. 19

GOVERNMENT TELEGRAPH SERVICE—*Continued.*

NAMES of employees and monthly salaries, &c., Yukon Telegraph Service, &c.—*Con.*

YUKON LINES—*Continued.*

Number.	Office.	Intermediate Distance.	Positions.	Salaries per Month.	Tariff.	Night Rate.
				$ cts.	$ cts.	$ cts.
63	Ogilvie	23	J. P. Beausoleil, operator	82 50	300 " 20	
			S. V. Clem, lineman	75 00		
64	Dawson	48	W. Brownlow, manager	150 00	300 " 20	
			C. A. Couture, foreman	125 00		
			G. A. McLachlan, day opr.	125 00		
			F. A. Hanley, night oper.	125 00		
			R. C. MacDonald, clerk	100 00		
			H. Douglas, messenger	$3 per day		
			Wm. Gross, lineman	80 00		
			Mrs. D. Hunt, house kpr &cook	100 00		
65	Forty Mile	55	W. Boyd, operator	82 50	325 " 20	
66	Boundary	40			325 " 20	
	Supt. office		J. Y. Rochester, act. supt	200 00		
	Vancouver, B.C.		J. J. Healy, clerk	140 00		
			Emma Hays, stenographer	65 00		
		2,252½		9,513 65		
			Add 10 persons $3 per day as above	900 00		
			Total monthly salaries say	$10,400 00		

YUKON TARIFFS.

The rates given above for points north of Quesnel are one-third less than those primarily adopted, which were calculated on the general basis of 50 cents for 100 miles and 25 cents for each additional 100 miles, counting the distance from Ashcroft.

The local rates between offices north of Quesnel are calculated on the basis of 50 cents for 100 miles and 25 cents for each additional 100 miles, and the local rates between offices north of Atlin are fixed at 50 cents for each 100 miles.

Cable Messages.—On transatlantic business the word rate is twice as much as the additional word rate given in the list for all points north of Ashcroft :—Barkerville, $3 \times 2 = 6$c.; Dawson $20 \times 2 = 40$c. per word.

On transpacific business the word rate is the additional word rate plus 4c.; Barkerville, $3 + 4 = 7$c.; Dawson, $20 + 4 = 24$c. per word to or from Ashcroft.

Press despatches.—For the *Yukon* line the rate is 1 cent per word, minimum charge $1; this applies to the whole line.

Yukon system connects at Boundary with U. S. Sig. Service Telegraph System.

* Where the tariff rate is entered as 25-1 or 50-2, &c., the meaning is that the rate is 25 cents or 50 cents for ten words and 1 cent or 2 cents for each additional word.

GOVERNMENT TELEGRAPH LINES.

SPECIAL TARIFF.

Cable messages.—Rates for cable messages passing over the Yukon line will be found in connection with the Yukon tariff in the following pages.

Elsewhere, the rate for transatlantic messages passing over the government lines is the same as for ordinary through messages, excepting where the ordinary tariff is more than 25 cents; in such cases the government line rate is 4 cents per word, with a minimum charge of 25 cents. For example :—

For a message of six words or less the charge is 25 cents for government line.

For a message of seven words the charge is (7 x 4) 28 cents for government line.

For a message of twelve words the charge is (12 x 4) 48 cents for government line.

In every case the counting of words includes the address and signature in the same way as for transatlantic cable tolls.

Press despatches.—The rate for press despatches on the government lines (excepting the Yukon line), is 20 cents per 100 words; no single message less than 20 cents.

For the *Yukon* line the rate is 1 cent per word, minimum charge $1; this applies to the whole line.

REGULAR TARIFF.

NOVA SCOTIA.

Line from North Sidney to Meat Cove and Mabou—Local rate 25-1* (20 *offices.*)

Big Bras d'Or	Through rate 15-1 from	North Sydney, W. U.	office.
New Campbellton's (Kelly's Cove)	"	"	"
Englishtown	"	"	"
Baddeck	"	"	"
Murray	"	"	"
Indian Brook	"	"	"
French River	"	"	"
South Ingonish	"	"	"
Ingonish	"	"	"
Neil's Harbour	"	"	"
Dingwall	"	"	"
Aspy Bay	"	"	"
Meat Cove	"	"	"
Pleasant Bay	"	"	"
Cheticamp	"	"	"
Grand Etang	"	"	"
North-East Margaree	"	"	"
Margaree Harbour	"	"	"
South-West Margaree	"	"	"
Inverness Town (Broad Cove)	"	"	"

Night messages are exchanged with the Western Union Telegraph Company for offices on this line. Rate 1 cent per word with minimum of 15 cents. The local night rate is 1 cent per word with minimum of 25 cents.

*When the tariff rate is entered as 25-1 or 50-2, &c., the meaning is that the rate is 25 cents or 50 cents for ten words and 1 cent or 2 cents for each additional word.

Line from Barrington to Cape Sable—Local rate 12-1.

Newellton.....Through rate 12-1 from Barrington, W. U. office
Cape Sable Lighthouse..... " " "

This line is now operated by the local telephone company. Terms of lease provide for former telegraph rate as above not being exceeded.

NEW BRUNSWICK.

Line from Chatham to Point Escuminac—Local rate 25-1 (4 offices.)

Bay du Vin.....Through rate 15-1 from Chatham, G. N. W. office.
Lower Hardwicke..... " " "
Escuminac..... " " "
Pt. Escuminac Lt. House..... " " "

Line from Eastport, Me., to Campobello, Grand Manan, and Whitehead Islands (9 offices)—Local rates between offices on Grand Manan, and Whitehead Islands, 15-1; Grand Manan and Campobello Island 25-2; The Islands and Eastport, Me., 25-2, W.U.O.

Welchpool, Campobello.....Through rate 25-2 from Eastport, Me., W. U. office.
Flagg's Cove, Grand Manan..... " " "
Castalia..... " " "
Woodward's Cove..... " " "
Grand Harbour..... " " "
Seal Cove..... " " "
Southern Head..... " " "
Cheney's Head..... " " "
Whitehead Islands..... " " "

QUEBEC.

Line from Gaspé to Anticosti Island, Q. (9 offices)—Local rates between offices on the Island 25-1; Gaspé and the Island offices 50-2.

South-West Point..... Through rate 50-2 from Gaspé, G. N. W. office.
Salt Lake..... " " "
Shallop Creek..... " " "
South Point..... " " "
Heath Point..... " " "
Fox Bay..... " " "
Becscie River..... " " "
West Point..... " " "
English Bay..... " " "

Line from Meat Cove, C.B., N.S., to Magdalen Islands, Q. (9 offices)—Local rates between offices on the Islands 25-1; Meat Cove and the Islands 50-2; offices on the Meat Cove line and the Islands 50-2.

Amherst Island.....Through rate 50-2 from North Sydney, W. U. office.
Amherst Lt. House..... " " "
Etang du Nord Village..... " " "
Etang du Nord Lt. House..... " " "
Cap aux Meules (Grindstone)..... " " "
House Harbour..... " " "
Grosse Isle..... " " "
Grand Entry..... " " "
Bryon Island..... " " "

Line from Meat Cove, C.B., N.S., to St. Paul's Island—Local rate between offices on Meat Cove line and St. Paul's 50-2 (1 office).

St. Paul's Island Lt. House 50-2 from North Sydney, N.S., W.U. office.

Line from Quebec to Grosse Isle Quarantine Station (7 offices)—Local rates between offices on Orleans Island and Isle Réaux, 15-1; on Orleans Island, Isle Réaux and Quebec 15-1; on Orleans Island and Grosse Isle 25-1; on Isle Réaux and Grosse Isle 15-1.

St. Pierre, Orléans Island	Through rate 15-1	from	Quebec, G. N. W.	office.
Ste. Pétronille	"	"	"	
St. Laurent	"	"	"	
St. Jean	"	"	"	
St. François	"	"	"	
Isle Réaux	"	"	"	
Grosse Isle	" 25-1	"	"	

Line from Baie St Paul to Chicoutimi (7 offices).

For business with offices west of Baie St. Paul and terminating at Quebec, add 15c. and 1c. to the government line tariff.

For business with offices west of Baie St. Paul, beyond Quebec, add the full rate of the Great North-Western Telegraph Company to the government line tariff.

Line from Murray Bay to Chateau Bay (48 offices) with branch to Anticosti and extension to Belle Isle.

For business with offices west of Murray Bay and terminating at Quebec, add 15c. and 1c. to the government line tariff.

For business with offices west of Murray Bay, beyond Quebec, add the full rate of the Great North-Western Telegraph Company to the government line tariff.

Local rates between offices not more than 100 miles apart 15-1; more than 100 miles apart 25-1; on mainland and Anticosti 50-2; and on mainland and Belle Isle 50-2.

St. Urbain	15-1 from	Baie St. Paul	(Ck. Que.) G. N. W.	office.
Lacruche	"	"	"	
St. Alexis	"	"	"	
L'Anse St. Jean	"	"	"	
St. Alphonse de Bagotville	"	"	"	
Chicoutimi	"	"	"	
Cap àl'Aigle	15-1 from	Murray Bay	(Ck. Que.) G. N. W.	office.
Ste. Fidèle	"	"	"	
Port au Persil	"	"	"	
St. Siméon	"	"	"	
Baie des Rochers	"	"	"	
Rivière aux Canards	"	"	"	
St. Etienne	"	"	"	
Tadoussac	"	"	"	
Bergeronnes	"	"	"	
Escoumains	"	"	"	
Baie des Bacons	"	"	"	
Mille Vaches	25-1 "	"	"	
Portneuf Mills	"	"	"	
Portneuf Light	"	"	"	
Sault au Cochon	"	"	"	
Betsiamis (Bersimis)	"	"	"	

Manicouagan (Pt. Outardes).	25-1	from Murray Bay (Ck. Que.)	G. N. W. office.
Scougall's Mills	"	"	"
River Godbout	"	"	"
Pointe des Monts	"	"	"
Trinity Bay, West	"	"	"
Trinity Bay, East	"	"	"
Caribou Islands	"	"	"
English Point	"	"	"
Pentecost	"	"	"
Ste. Marguerite	"	"	"
Clark City	"	"	"
Seven Islands	"	"	"
River Moisie	"	"	"
Little River	"	"	"
Sheldrake	"	"	"
Thunder River	"	"	"
Magpie	"	"	"
St. John River	"	"	"
Long Point	"	"	"
Mingan	"	"	"
Point Esquimaux	"	"	"
Betchouanes	"	"	"
Piastre Bay	"	"	"
Watichou	"	"	"
Aguanus	"	"	"
Natashquan	"	"	"
Kegaska	"	"	"
Masquaro	"	"	"
Big Romaine	"	"	"
Wolfe Bay	"	"	"
Pointe du Maurier	"	"	"
Harrington	"	"	"
Whale Head	"	"	"
Baie des Moutons	"	"	"
Bay de Ha	"	"	"
St. Augustin	"	"	"
Coxipi	"	"	"
Rockey Bay	"	"	"
St. Paul River	"	"	"
Brador Bay	"	"	"
Bonne Espérance (St. Paul's River)	"	"	"
Forteau Bay	"	"	"
Pointe Amour	"	"	"
Red Bay	"	"	"
Chateau Bay	"	"	"
Belle Isle	50-2	"	"
Anticosti Id. via Long Point.		"	"

ONTARIO.

Line from Leamington to Pelee Island (Telephone Circuit)—Local rates between Leamington and Point Pelee 15-1; *mainland and Island offices* 25-1; *offices on the Island* 15-1 *(8 offices).*

Gun Club House, mainland	15-1	(thro' business) from	Leamington, G. N. W.
Pointe Pelee, mainland		"	"

Leamington Dock	15-1 (thro' business)	from	Leamington, G. N. W.
North Pt. Lt. H'se, Pelee Island	"	"	"
North Dock, Pelee Island	"	"	"
McIntyre's Corners	"	"	"
West Dock, Pelee Island	"	"	"
South Dock	"	"	"

NORTH-WEST TERRITORIES.

Line from Qu'Appelle (C.P.R. Sta.) to Edmonton, Alberta—Local rates, 15-1, 25-2, 50-3, for distances 10 to 600 miles (13 offices.)

Fort Qu'Appelle	25-2	Qu'Appelle or	Saskatoon.
Touchwood	"	"	
Saskatoon	"	"	
Saskatoon (Ts. office C.P.R. Tel.)	"	"	
Henrietta	"	"	
Battleford	"	"	
Bresaylor	25-2	Saskatoon ; 50-3	Qu'Appelle or Edmonton.
Onion Lake	"	"	
Moose	"	"	
St. Paul de Métis	50-3	Saskatoon,	Qu'Appelle or Edmonton.
Saddle Lake	"	"	
Victoria	25-2	Edmonton ; 50-3	Qu'Appelle or Saskatoon.
Star	"	"	
Fort Saskatchewan	"	"	
Edmonton (Transfer office C. P. R. Tel.)	"	"	

Line from Moosejaw (C. P. Sta.) to Wood Mountain—Local rates 25-2 (1 office).

Wood Mountain ..... 25-2 from Moosejaw.

BRITISH COLUMBIA.

Line from Victoria to Cape Beale—Local rate 50-3 (6 offices).

Sooke	50-3	from Victoria	C. P. R. Tel. office.
Otter Point		"	"
Jordan River		"	"
Port San Juan		"	"
Carmanah Lt. House		"	"
Cape Beale		"	"

Line from Nanaimo to Comox—Local rate 25-2 (9 offices).

Wellington, (C.P.R. & E. & N. Ry.)	25-2	from	Nanaimo.
Parksville		"	or Wellington.
Fanny Bay		"	"
Cumberland		"	"
Union Bay		"	"
Union Mines		"	"
Courtney		"	"
Comox		"	"
Alberni (branch)		"	"

Line from Alberni to Cape Beale—Local rate 50-3.

Between offices on the Victoria-Cape Beale line and the Nanaimo-Comox line, via Alberni, 50-3.

Line from Golden to Windermere—Local rate 25-2 (3 offices).

1. Athalmer. . . . . 25-2 from Golden (C. P. Ry.)
2. Wilmer. . . . . "
3. Windermere. . . . . "

Line from Kamloops to Lower Nicola (Telephone) (8 offices).

Connections are leased and lessees allowed commission on messages of non-subscribers. Tariff 25-2 local and from Kamloops, and for conversations 25 cents for five minutes, half that rate for each additional five minutes or fraction thereof.

Yukon System.

Tariff rates for the Yukon lines are given in the Table of Staff, &c., in the foregoing pages.

SUMMARY.

Offices on government lines, as listed	312
Offices at transfer points with connecting lines	15
Total number embraced by the service	327

The following report from Mr. J. Y. Rochester, acting superintendent of the Yukon system, at Vancouver, is elsewhere referred to in the foregoing pages.

VANCOUVER, B.C., November 1, 1904.

SIR,—I respectfully submit to you herewith my report of the working of the Yukon telegraph system for the past fiscal year, ended June 30, 1904.

The revenue and expenditure for the past fiscal year for the main line and branches is as follows :—

MAIN LINE, ASHCROFT TO NORTHERN BOUNDARY.

Expenditure.		Revenue.	Surplus.	Deficit.
$ cts.		$ cts.	$ cts.	$ cts.
159,679 25		123,757 31		35,921 94
13,531 42	Port Simpson Line	1,051 23		12,480 19
977 44	Barkerville	1,024 84	47 40	
1,677 58	Horsefly	663 11		1,014 47
924 46	Lillooet	495 48		428 98
176,790 15		126,991 97	47 40	49,845 58
	Less surplus			47 40
	Deficit			49,798 18
	Expenditure			$176,790 15
	Revenue			126,991 97
	Deficit			49,798 18

To which must be added expenditure made at Ottawa.

COMPARATIVE Statement of revenue and expenditure for 1902-03 and 1903-04.

Revenue.	
1902-1903	$113,621 44
1803-1904	126,991 97
Increased revenue	$13,370 53
Expenditure.	
1902-1903	$242,211 51
1903-1904	176,790 15
Decreased expenditure	$65,421 36
Volume of Business.	
1902-1903—Messages, 41,347	$107,585 36
" —Press, 603,618	6,036 18
Total	$113,621 54
1903-1904—Messages, 47,982	$119,238 39
" —Press, 775,358	7,753 58
Total	$126,991 97

Increased Messages, 6,635.
" Press words, 171,740.
Increase to revenue, $13,370.55.

The following gives the increase and decrease for each month of the years :—

	Decrease.	Increase.	Total.
1903.	$ cts.	$ cts.	$ cts.
July		638 53	
August	196 26		
September	293 14		
October		543 66	
November		1,106 57	
December		1,115 77	
1904.			
January		114 10	
February		346 88	
March		2,518 05	
April		594 92	
May		2,363 43	
June		4,517 92	
	489 40	13,859 93	
Less		489 40	
			13,370 53

Expenditure.	
Salaries	$95,712 54
Provisions and supplies	36,200 49
Freight and packing charges, transportation, &c	27,451 18
Sundry expenses, rent, fuel, light, board of employees, repairs to trails, &c	17,425 94
Total	$176,790 15

Number of Employees..	
Main Line, Ashcroft to Northern Boundary	109
Port Simpson and Hazelton Branch	12
Horsefly Branch	3
Lillooet "	2
Barkerville "	1
Total	127

The revenue has shown an increase for every month with the exception of a small decrease in August and September; but the prospect of the early completion of the U.S. military cable from Seattle to Skagway and Valdez will seriously affect the receipts for the future, as all business to and from the U.S. military lines in Alaska will be practically diverted to the cable lines.

The volume of business has very materially increased during the past year. The revenue returns show an increase of 6,635 messages, and 171,740 words of press over 1902-03.

Local business also has improved somewhat, and I am of the opinion that this will be materially increased on both main and branch lines, more particularly on that part of the line between Quesnelle and Hazelton, as quite a number of settlers have taken up homesteads along the line in the Nechaco and Bulkley valleys, and as there is no mail communication the different stations in that part of the country should receive considerable business.

The expenditure has been kept down to as low a point as possible consistent with an efficient service. Prompt returns of all expenditures on the different divisions are made by the district superintendent, and all the salaries and accounts are settled monthly. The expenditure for the main line and branches are given separately, showing a deficit on the main line :—

Main line	$35,921 94
Port Simpson and Hazelton branch	12,480 19
Horsefly branch	1,014 47
Lillooet branch	428 98
	$49,845 58

to which must be added the expenditure made through the department at Ottawa, of which I have no record.

The Barkerville branch shows a small balance on the right side of $47.40.

The service on the line has been fairly well maintained considering the length of the line and the nature of the country through which it passes, and interruptions have not been so frequent nor of so long duration as in the previous year.

More refuge cabins have been built between stations and fitted with stoves, blankets and provisions, for the use of the linemen when out. Packing blankets and provisions and the length of time taken to make up a camp for the night was the cause of great delay in restoring communication.

The main line has been thoroughly gone over and put in good repair.

The Port Simpson and Hazelton branch has also received a thorough overhauling, and the service, since April last, has been fairly good compared with the previous year, and I fully expect that communication will be kept up with very little interruption during the winter months.

The Barkerville and Lillooet branches are in rather a bad condition. A great many poles require to be renewed and a general clearing of the line will be necessary. The appropriation voted last session is now being expended, and although not sufficient to do all the repairs that are necessary, will put the line in fairly good shape.

I made a trip of inspection to Hazelton, Port Simpson, Aberdeen and Telegraph Creek last summer, and found everything in connection with these offices in good condition.

All intervening stations on the line between Quesnelle and Atlin have been visited by the different line foremen, who have reported everything kept in a neat and clean condition, and provisions properly taken care of.

I regret to report the death of F. B. Gorrell, operator at Pike River, and W. S. Lanktree, operator at Yukon Crossing.

The former accidentally shot himself while out south of Pike River on December 30 last. Medical assistance was obtained as speedily as possible from Atlin, where he

was taken; but succumbed to his injuries shortly after reaching Atlin. His remains were sent east to Westport, Ont., at the request of his relatives.

Operator Lanktree was drowned in Rink rapids on June 7, by the upsetting of his canoe while out repairing the line. His body was recovered on June 11, and interment was made at White Horse.

All funeral expenses in connection with these accidents were paid by the department.

The services of several of the employees were dispensed with for neglect of duty, but, with the exception of these all of the employees have given good satisfaction and shown an active interest in the performance of their several duties.

I have the honour to be, sir,
Your obedient servant,

(Sgd) J. Y. ROCHESTER,
Acting Superintendent.

A Gobeil, Esq.,
Deputy Minister of Public Works,
Ottawa.

PART VI

REPORT OF THE COLLECTOR OF REVENUE

DEPARTMENT OF PUBLIC WORKS.

1903-1904.

COLLECTION OF REVENUE

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, November 14, 1904.

F. GELINAS, Esq.,
Secretary, Department of Public Works,
Ottawa.

SIR,—I have the honour of submitting my report for the year ended June 30, 1904.

I have examined the books and accounts of the officers under my control (excepting these of the Dock Master at Esquimalt), and it is my pleasing duty to state that in all cases the rules laid down for their guidance by the department have been carefully observed by these officers, who have faithfully accounted for all revenues collected by them.

During the past fiscal year the revenue accrued from Public Works shows a decrease of $20,506.73, being $107,950.90 while for the preceding year it amounted to $128,457.63.

The collections also show a decrease of $20,872.81 being $107,115.32, while in the preceding year they amounted to $127,988.13.

The revenue accrued from slides and booms was $71,331.20 or $6,661.28 less than in 1902-03. The collections were $70,495.62 or $7,027.36 less than the previous year. The outstanding uncollected dues on June 30 last, increased by $835.58.

The graving docks yielded $32,444.56 or $13,432.52 less than in 1902-03.

From the locks, the receipts were only $140.64 all of which was refunded under Order in Council of July 28, 1903.

From rents, the revenue was $4,034.50 being $84.49 more than in 1902-03.

Having dealt with the revenue in a general way, I beg to submit the particulars in detail relating to the several services under their respective heads.

SLIDES AND BOOMS.

OTTAWA DISTRICT.

The tolls charged up amounted to $41,756.85, or $4,580.53 less than in 1902-3.

The number of logs that passed through the works was 4,314,524, or 249,917 more than the preceding year.

Of square timber there were 15,092 pieces against 18,442 in 1902-03.

All the revenue accrued in this district during the year just closed was collected, excepting $637.37 which it is claimed should be written off.

Of the dues accrued since July 1, 1889, when this department took over the collection, there remains uncollected $10,473.67, full particulars of which will be found in statement No. 2, herewith.

Of the dues accrued prior to July 1, 1889, there remains uncollected $56,805.65, all of which should be written off. See statements Nos. 1 and 3, herewith for particulars.

The accounts for the Ottawa District stand thus :—

Dues accrued during the year 1903-04		$41,756 85
Collected	$41,119 48	
Outstanding June 30, 1904	637 37	
		$41,756 85

The amount outstanding in the Ottawa district, year by year being as follows:—

Dues accrued prior to the collection being transferred to this department			$56,805 65
Dues of	1889-90	$6,903 05	
"	1890-91	28 42	
"	1892-93	379 80	
"	1896-97	196 71	
"	1900-01	2,328 32	
"	1903-04	637 37	
			$10,473 67

I would again ask particular attention to the fact that since this department assumed the collection of these dues, of the amount accrued, viz., $795,917.44, all but $28.42, absolutely owing to the department has been collected ; the remainder above shown and aggregating $10,473.67, being composed of Chaudière boomage, $6,903.05, which should have been written off long ago, and the balance being covered by counter claims, which, if my information be correct with regard to them, ought to be allowed, excepting perhaps the item of 1903-04.

Herewith are statements in detail :—

No. 1.—Statement of amounts outstanding prior to July 1, 1889, uncollected September 30, 1904.

No. 2.—Statement of dues accrued at Ottawa since July 1, 1889, uncollected September 30, 1904.

No. 3.—Statement of amounts accrued at Quebec prior to July 1, 1889, uncollected September 30, 1904.

No. 4.—Statement of the number of pieces of square timber, saw logs, &c., which passed through the Ottawa works during the year ended June 30, 1904.

No. 5.—Statement of dues accrued from each of the slides and works in the Ottawa district during the year ended June 30, 1904.

In the face of facts adduced it is well to show where the decrease in the revenue has occurred.

There were decreases as follows, viz.: Main Ottawa, $456.05 ; Petewawa, $537.07 ; Madawaska, $1,507.31; Coulonge, $2,325.88 and Gatineau, $2,266.45, while the Chenaux boom shows an increase of $283.44, Dumoine, $726.61 and Black river, $1,502.18, leaving a net decrease on the whole of $4,580.53.

I would ask attention to the revenue from the Madawaska, formerly one of our largest revenue producing streams ; during the year just closed, it only yielded $1,451.58, the falling off being attributed to the exhaustion of the pine on most of the limits, while of that which remains, nearly all of the logs are either sawed at Whitney or brought to Ottawa by rail.

The revenue again falls short of the estimated income when the present tariff was imposed, but this can, I think, be largely attributed to the great number of small logs, formerly left in the woods, being now brought down and utilized, and I may say here that the constantly decreasing diameter of the logs brought down accounts for the fact that though the number may appear larger, yet the revenue being based on the board measure contents, is smaller.

Before closing these remarks on the Ottawa district, I would again respectfully urge the desirability of having the question of the arrears appearing as uncollected brought before the Public Accounts Committee, not only those of the Ottawa district, but those from the other districts as well, so as to obtain the authority of parliament to write them off, as they are a source of friction between the government and the individuals interested, frequently preventing settlement of accounts justly due individuals, while the amounts standing against them should have been written off long ago.

ST. MAURICE DISTRICT.

The revenue from this district was $27,321.67, being $1,910.66 less than the preceding year.

The number of pieces of timber of all kinds which passed through the works was 2,682,250.

All the dues of 1903-04, were collected.

Since I took charge of this district, in 1892, all the revenue accrued has been collected.

The amount outstanding remains the same as at the close of the preceding year, viz.: June 30, 1903, namely, $14,481.49, all of which should be written off for reasons assigned in statement No. 6, herewith.

The spring of 1903, was a most remarkable one for this district, there being no rains until the beginning of June, in consequence, the water in the St. Maurice was very low, and up to that time it seemed as if the bulk of the logs would not come down for want of water, however, when the rains set in, the water rose satisfactorily and kept at a fair level for the remainder of the summer, thus though most of the logs came out, yet a great many remained in the tributaries and along the main river, which came down in spring of 1904, it is worthy of notice here that though the quantity of logs left along the river to come with the ice in the spring far surpassed that known for many years, yet the number which was lost through going out into the St. Lawrence was so small as to be hardly worth mention.

During the past summer an alligator warping tug was purchased and the utility of the machine established, for without it, it is doubtful if anything like the large quantity of logs handled at Grand Mère, could have been gotten below that point, and if not presuming too much, I would, in the interest of the department, urge the advisability of having one of these tugs ready at Three Rivers next spring before the ice breaks up, for, as a few hours has made it impossible to finish stretching the booms there, with this utensil, there is no saying exactly how much time would be saved compared with the time required to handle these heavy booms by hand as in the past, and much of the risk of the 400,000 logs now in the river being lost by going out into the St. Lawrence obviated.

I trust I may be pardoned, if I again urge in view of the magnitude of the interests involved, the providing in the near future of a means of retaining the waters of the great lakes at the head of the St. Maurice, in the early spring months, and so providing against such disastrous floods as have occurred in the past, whereby the lumbermen suffer great loss of property, but the government also through the works being carried away or damaged, lost heavily, and this even in recent years. With some such a system for retaining the water in the spring, the supply during the dry months of midsummer could be regulated and much of the difficulties experienced in recent years, if not overcome, at least be modified to a great extent, as the forests are being denuded so rapidly, the snow melts more quickly than formerly in the spring, the water so resulting together with the usual spring rains, coming all at once, form a flood that is likely to be greater every year as time goes on.

The department is interested in a very great degree in devising such a system as suggested, having such large sums invested in the works on the St. Maurice, and moreover, if the logs are not prevented from going into the St. Lawrence, not only the lumberman is the loser, but the government is deprived of the revenue which it would otherwise have derived from the timber.

Such a scheme, if my information be correct, would not cost a very large outlay, considering the interests involved, and it would not be unreasonable to expect that not only the lumbermen, but the manufacturers, whose mills are driven by water, would gladly contribute to its cost and maintenance, while the provincial government might be asked to assist.

I may say here, lest any one might be carried away by an exaggerated idea of quantity, when the millions of logs taken out on the St. Maurice are mentioned, the

vast majority of the logs are spruce and a very great portion of them are very small, as they take for making pulp everything down to four inches at the small end, in fact I have seen some as small as two inches ; moreover, as the proportion of this small stuff is constantly increasing, it may be easily understood why, though the number of logs has rapidly increased, the revenue has not increased as it would if the logs were of a larger size, since this small stuff pays a much smaller rate than the logs of 10 inches and upwards in diameter.

I may say in conclusion that every precaution should be taken to handle an unusually large quantity next year, for besides the 400,000 logs in the river now, it is probable that the number of logs to be made this winter will exceed 5,000,000 pieces.

NEWCASTLE DISTRICT.

The dues accrued from this district during the year amounted to $2,252.68, all of which was collected, but $198.21 due by Gilmour & Co.

The total outstanding uncollected on June 30, 1904, was $8,323.81, of which $3,521.19 should be written off in accordance with a judgment in the Exchequer court: the remainder consists of an account in the hands of the Department of Justice for collection and amount due by Gilmour & Co. See statement No. 7 for details.

With regard to this latter, I may say that they are in treaty with another department of the government for the sale of certain properties owned by them, which would be of very great use to the government and settlement of the account with this department is only waiting the decision as to this sale, whether favourable or not.

GRAVING DOCKS.

ESQUIMALT GRAVING DOCK.

The revenue from this source was $9,881.35 shown in detail in statement No. 8, herewith, being less than the previous year by $3,787.65.

Of the 154 days the dock was occupied during the year, it was used by the British navy for 128 days, Canadian government vessels for 4 days, and by the mercantile marine for 22 days.

LÉVIS GRAVING DOCK.

The revenue from this work was $8,315.05 less than for the previous year, being for 1903-04, $15,573.85. See statement No. 9 herewith.

The dock was occupied for 115 days exclusive of the winter months, during which it was occupied by steamship 'Campana' steamer 'Admiral,' government dredge 'No. 6' and tug 'Storm King.'

KINGSTON GRAVING DOCK.

The dock was occupied for only 80½ days exclusive of winter months. The income for the past year was $6,989.36 or $1,329.83 less than in 1902-03. See statement No. 10 for details.

LOCKS.

By Order in Council of July 28, 1903, the tolls on the locks were abolished for two years, and all tolls collected since the beginning of navigation of 1903, directed to be refunded.

RIVIÈRE DU LIÈVRE LOCK.

The tolls collected amounted to $42.12, which were refunded.

RIVIÈRE YAMASKA LOCK.

The receipts from this work were $98.52 also refunded.

RENTS.

The collections on this account were as follows :—

From old post office building, Victoria, B.C.	$3,792 00
" " " St. John, N.B.	112 50
" water lot, Port Morien, N.S.	1 00
" part Toronto island	1 00
" land in Kingston, Ont.	1 00
" part graving dock premises, Kingston, Ont.	125 00
" part reserve, Victoria island, Ottawa, Ont.	2 00
	$4,034 50

There are no rents uncollected on claims in my hands.

Thus the total revenue that passed through my hands during the year ended June 30, 1904, may be summarized as follows :—

From slides and booms	$ 70,495 62
Graving docks	32,444 56
Locks	140 64
Rents	4,034 50
	$107,115 32

The following comparative table of Public Works revenue accrued 1903-04 and 1902-03, shows at a glance in what accounts the increases and decreases herein referred to occurred :—

—	Year. 1903-04.	Year. 1902-03.	Increase. 1903-04.	Decrease. 1903-4.
SLIDES AND BOOMS.	$ cts.	$ cts.	$ cts.	$ cts.
Ottawa District	41,756 85	46,337 38		4,580 53
St. Maurice District	27,321 67	29,232 33		1,910 66
Newcastle District	2,252 68	2,422 77		170 09
	71,331 20	77,992 48		6,661 28
GRAVING DOCKS.				
Esquimalt, B.C.	9,881 35	13,669 00		3,787 65
Lévis, Que	15,573 85	23,888 90		8,315 05
Kingston, Ont.	6,989 36	8,319 18		1,329 82
	32,444 56	45,877 08		13,432 52
LOCKS.				
Rivière du Lièvre	42 12	279 78		237 66
Rivière Yamaska	98 52	358 28		259 76
	140 64	638 06		497 42
Rents	4,034 50	3,950 01	84 49	

No. 1.—STATEMENT of Slidage and Boomage from the Ottawa Slides and Works, accrued prior to July 1, 1889, Outstanding June 30, 1904, and remaining uncollected on September 30, 1904.

By Whom due.	Bad and Doubtful Debts.	Chaudière Boomage in Suspense.	Other Slide and Boom Dues Disputed.	Total Outstanding on Sept. 30, 1902.	Year to which Dues Belong.	Remarks.
	$ cts.	$ cts.	$ cts.	$ cts.		
John & Wm. McLean	53 14			53 14	1873	Insolvent.
John Rowan	342 50			342 50	1872-1873	"
Lemieux & Charette	21 30			21 30	1873	"
Taillon & Lapierre	148 10			148 10	1873-1874	"
Mosgrove & McHarry	261 42			261 42	1873-1874	"
W. C. Wells	600 90			600 90	1873-1874	"
Dufresne & McGarity	528 80			528 80	1874-1875	"
Walton Smith	171 46			171 46	1874-1875	"
A. H. Baldwin	3,507 92			3,507 92	1871 to 1874	"
Hon. James Skead	9,807 65			9,807 65	1861, 1863, 1864, 1869, 1875 to 1878	"
Batson & Currier	5,558 70			5,558 70	1875 to 1877	"
A. F. A. Knight	546 30			546 30	1878	"
James Walker	11 25			11 25	1877	"
R. Campbell & Son	1,558 50			1,558 50	1879 to 1881	"
James G. Bryson	73 50			73 50	1886	"
Costello Bros	90 62			90 62	1882	"
N. E. Cormier	428 34			428 34	1888	"
James Yuill	9 29			9 29	1876	Overcharge.
J. & B. Grier	76 84			76 84	1883	"
R. & W. Conroy	95 42			95 42	1882-1883	" reported in return S—38, for March, 1886.
A. & P. White	101 00			101 00	1881	"
B. Caldwell & Son	4 33			4 33	1887	"
J. R. Booth		9,871 93	398 88	10,270 81	1881 to 1888	$398.88, counter claim for damages by the breaking of Coulonge Boom.
Perley & Pattee		8,889 85		8,889 85	1881 to 1888	
The Bronsons & Weston Lumber Co.		8,180 79		8,180 79	1881 to 1888	
Pierce & Co		462 18		462 18	1888	
G. A. Grier & Co		1,060 59		1,060 59	1886-1887	*Chaudière boomage. These parties claim that they have maintained these works wholly at their own expense since 1881.
Estate late Levi Young		1,461 20		1,461 20	1881 to 1885	
Wm. Mason		413 85		413 85	1881 to 1888	
Gilmour & Co		406 27		406 27	1884	
John Rochester		258 88		258 88	1881 to 1883	

J. & G. Bryson	.....	.....	252 20	252 20	1856	....	Counter claim for damage by breaking of Coulonge Works.
	23,997 28	31,006 54	651 08	55,653 90			

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1904.

EDWARD T. SMITH,
Collector of Slide and Boom Dues.

No. 2.—STATEMENT of Slide and Boom Dues accrued from the Ottawa River Works since July 1, 1889, Outstanding on September 30, 1904.

Name.	Year to which Dues belong.	Chaudière Boomage in Suspense.	Ordinary Dues.	Total Outstanding	Remarks.
		$ cts.	$ cts.	$ cts.	
J. R. Booth	1889-90	2,561 69	....	2,561 69	Chaudière boomage reported to Council, and referred to Treasury Board, should be written off.
The Bronsons & Weston L. Co.	1889-90	2,056 96	.....	2,056 96	
Perley & Pattee	1889-90	1,203 26	.....	1,203 26	
Wm. Mason & Sons	1889-90	167 66	... .	167 66	
Pierce & Co.	1889-90	913 48	....	913 48	
Alex. Fraser Acc. Thos. Stephens	1890-91	.....	28 42	28 42	Legal action taken to recover this.
J. R. Booth	1892-93	.....	379 80	379 80	Retained by Mr. Booth in settlement of an account due him which the Auditor General refuses to pay, as Mr. Booth appears to be in arrears in this and Statement No. 1.
Bryson & Fraser	1896	.....	196 71	196 71	Have counter claim for work done on slide to this amount.
McLachlin Bros	1900	....	2,328 32	2,328 32	Have counter claim for damages to logs in consequence of break in Black River slide.
J. R. Booth	1903-04	....	339 27	339 27	These two parties claim that as a slide on the Petawawa is not now used, no charge should be exacted.
Hawkesbury Lumber Co	1903-04	....	298 10	298 10	
		6,903 05	3,570 62	10,473 67	

EDWARD T. SMITH,
Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1904.

No. 3.—STATEMENT of Outstanding Slide Dues, Ottawa District, Bonds for which were sent to Quebec for Collection.

Name.	From 1860.	From 1861.	Total.
	$ cts.	$ cts.	$ cts.
Hon. James Skead..	245 00	210 00	455 00
James Mair		696 75	696 75
	245 00	906 75	1,151 75

These amounts were uncollected, as the parties claimed damages for loss caused by the Madawaska boom breaking in 1860.

A decision on their claims was not arrived at till August 2, 1869. On the 5th idem Messrs. Skead and Mair were notified that the department could not recognize their claim.

To the best of my knowledge, this decision was never communicated to the collector of slide dues, consequently these accounts remained in abeyance.

Since then both parties died, and I believe both were insolvent at the time of their death.

EDWARD T. SMITH,
Collector of Slide and Boom Dues.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1904.

No. 4.—STATEMENT of the number of pieces of Square Timber, Saw-logs, &c., that passed through the Government Slide and Works on the River Ottawa and its tributaries during the fiscal year ended June 30, 1904.

	Pieces.
Square timber..	15,092
Saw-logs..	4,314,524
Boom and dimension timber..	151,598
Cedars..	141,362
Railroad ties..	466,124
Fence posts..	139,077
Total..	5,227,777

Also 13,672 31-100 cords pulpwood.

Revenue accrued on the above was $41.756.85.

EDWARD T. SMITH,
Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1904.

SESSIONAL PAPER No. 19

No. 5.—STATEMENT showing the dues accrued on the under-mentioned works on the River Ottawa and its tributaries during the fiscal year ended June 30, 1904 :—

River or Other Improvement.	Amount.
Main Ottawa	$4,747 85
Cheneaux Boom	7,475 01
River Petewawa	7,831 31
River Madawaska	1,451 58
River Coulonge	6,328 08
River Dumoine	1,043 48
Black River	6,390 46
Gatineau	6,489 08
	$41,756 85

Amounting to $41,756.85.

EDWARD T. SMITH,
Collector of Slide and Boom Dues.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1904.

No. 6.—STATEMENT of Slide and Boom Dues from the St. Maurice Slides and Works outstanding on June 30, 1904, and remaining uncollected on September 30, 1904.

Name.	Year to which Dues belong.	Amount.	Total.	Remarks.
		$ cts.	$ cts.	
George Baptist, Son & Co.	1878	469 95		
"	1879	2,110 62		
"	1880	1,696 18		
"	1881	293 69		Have counter claims for damages to logs caused by the booms not being stretched early enough in the spring of 1878 to prevent the logs going over the chutes.
"	1882	165 80		
"	1884	118 50		
"	1888	4 28		
			4,859 02	These claims were submitted to Special Commissioner, Mr. McDougall, afterwards Judge, who, after hearing the evidence on both sides, recommended that the claims of the parties should be allowed.
Ross, Ritchie & Co	1878	3,072 84		
"	1883	2,173 68		
"	1884	28 96		
"	1886	1 62		
"	1887	4 38		
			5,281 48	
Alex. Baptist	1879		2,116 96	
Wm. Ritchie & Co	1888	779 24		
"	1889	332 11		
			1,111 35	Of this amount, $754.20 is claimed to be an overcharge. Insolvent.
Ritchie Bros	1886	413 43		
"	1887	634 71		
			1,048 14	This amount is composed of overcharges in 1886 and 1887 of $842.76 and overpayment in 1884 of $205.38.
G. B. Hall	1890		49 34	Insolvent.
T. E. Normand	1890		42 28	Claims that this balance is an overcharge.
Treffié Biron	1891		0 92	Would cost more to collect than it is worth.
			14,481 49	

To make this balance agree with the Public Accounts, there should be deducted $7.93 over credited Alex. Baptist, and $217.17 added thereto, being $190.40 paid July 23, 1884, and $26.77 over charged in error to Wm. Little, not in any of the collector's returns, which will give balance due September 30, 1894, of $14,690.73.

EDWARD T. SMITH,
Collector of Slide and Boom Dues.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1904.

No. 7—STATEMENT of Slide and Boom Dues accrued from the Newcastle and Trent River Works, outstanding on June 30, 1904, and remaining uncollected September 30, 1904.

Name.	Year to which Dues belong.	Amounts disputed.	Ordinary Dues.	Total.	Remarks.
		$ cts.	$ cts.	$ cts.	
Irwin & Boyd	1881	59 79		59 79	
Thomson & McArthur	1880	52 78		52 78	
Jabez Thurston	1882	12 50		12 50	Insolvent.
McDougall & Ludgate	1879	65 07		65 07	
Bigelow & Trounce	1882 to 1885	216 21		216 21	
R. G. Strickland	1882, '83, '85, '86, and '87	215 08		215 08	
Est. late Geo. Hilliard	1877 to 1883 and 1886	354 15		354 15	Dead and estate distributed.
T. G. Hazlett	1881, '82, '84 to '89	885 25		885 25	
J. M. Irwin	1882, '83, '85 to '88	698 45		698 45	According to judgment in Exchequer Court, *re* Boyd *vs.* Smith, these cannot be collected.
D. Ullyot	1881 to 1887	547 68		547 68	
Green & Ellis	1881 to '83, '85, '88 and '89	157 01		157 01	
A. W. Parkin	1884, '85, '88, '90 and '91	65 92		65 92	
The Dickson Estate	1883	137 50		137 50	
Alfred McDonald	1888	40 80		40 80	
John Parkin	1889	13 00		13 00	
Gilmour & Co	1893, '94, '95, 1900, '01, '02, '03		4,766 92	4,766 92	Sent to Dept. of Justice for collection.
John Dovey	1894, '95, '96		35 70	35 70	
		3,521 19	4,802 62	8,323 81	

EDWARD T. SMITH,
Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1904.

No. 8.—THE DRY DOCK AT ESQUIMALT, B.C.

STATEMENT of Dues and other Charges collected during the Year ended June 30, 1904.

Name of Vessel Docked.	Tonnage.	Period of Dockage.		Dockage Charges.	Other Charges.	Total.
		From	To			
		1903.	1903.	$ cts.	$ cts.	$ cts.
Str. Robert Adamson	2,992	July 6	July 14	1,100 00	18 60	1,118 60
Ship Columbia	2,577	" 15	" 15	400 00	1 80	401 80
		Shortage in May.		0 05		0 05
S.S. Elba	4,036	Oct. 5	Oct. 6	400 00	1 80	401 80
H.M.S. Shearwater	980	" 26	" 28	127 44		127 44
H.M.S. Flora	4,360	Nov. 11	Nov. 16	271 63		271 63
H.M.S. Grafton	7,500	" 25	Dec. 4	453 82		453 82
S.S Moana	3,915	Dec. 4	" 13			
		Less 3 lay days on 3,950 tons		995 00	70 29	1,065 29
		Overpaid		0 01		0 01
			1904.			
H.M.S. Flora	4,360	Dec. 14	Mar. 24	3,759 35		3,759 35
		1904.				
Ship Forteviot	3,145	Mar. 30	" 31	503 00	3 00	506 00
S.S. Inverness	3,734	Apl. 2	Apl. 3	400 00	1 80	401 80
H.M.S. Shearwater	980	" 7	" 14	298 25		298 25
S.S Garonne	3,876	May 7	May 10	636 00	9 00	645 00
H.M.S. Flora		Short paid in March.		34 25		34 25
H.M.S. Shearwater		"	April	2 66		2 66
Str. Quadra	573	May 16	May 20	390 00	3 60	393 60
	43,028			9,771 46	109 89	9,881 35

EDWARD T. SMITH,
Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1904.

No. 9.—THE DRY DOCK AT LÉVIS, QUE.

STATEMENT of Dues and other Charges collected during the Year ended June 30, 1904.

Name of Vessel Docked.	Tonnage.	Period of Dockage. From	To	Dockage Charges.	Other Charges.	Total.
		1903.	1903.	$ cts.	$ cts.	$ cts.
S.S. Norwegian	3,523	Entry fee.		200 00		200 00
"		July 15.	July 24.	1,284 14		1,284 14
S.S. Fridtjoff Nansen	3,275	Entry fee.		200 00		200 00
"		July 24	July 30.	893 00	2 00	895 00
Bark Sardhana	1,146	Entry fee.		200 00		200 00
"		Aug. 1.	Aug. 29	1,593 96		1,593 96
S.S. Manchester Trader	3,318	Entry fee.		200 00		200 00
"		Aug. 31.	Sept. 19.	2,410 84	2,440 00	4,850 84
Bark Sardhana		Entry fee.		200 00		200 00
"	1,146	Sept. 20.	Sept. 21.	201 57		201 57
S.S. Bergenhaus		Entry fee.		200 00		200 00
"	3,606	Sept. 25.	Oct. 10.	2,031 80		2,031 80
"			Over paid.	0 04		0 04
S.S. Campana	1,697	Entry fee.		200 00		200 00
"		Wintering		800 00	4 00	804 00
Str. Admiral		Entry fee.		200 00		200 00
"		Wintering		200 00		200 00
Steam Barge Orion	846	May 3.	May 9.	553 80	1 00	554 80
Dredge International	470	Oct. 17.	Oct. 27.	535 00		535 00
			1904.			
Tug Storm King and Dredge No. 6		Nov. 26.	April 26.			
		Wintering		400 00		400 00
		1904.				
Dredge International	470	May 14.	May 18.	394 00		394 00
S.S. Gauss	650	June 20.	Entry fee.	200 00		200 00
CASUAL REVENUE.						
For old pipes sold to C. F. Langlois			$28 70			28 70
	20,147		$28 70	13,098 15	2,447 00	15,573 85

EDWARD T. SMITH,
Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1904.

No. 10.—THE DRY DOCK AT KINGSTON, ONT.

STATEMENT of Dues and other Charges collected during the Year ended June 30, 1904.

Name of Vessel Docked.	Tonnage.	Period of Dockage. From	Period of Dockage. To	Dockage Charges.	Other Charges.	Total.
		1903.	1903.	$ cts.	$ cts.	$ cts.
Str. D. D. Calvin	750	June 30.	July 2.	188 00		188 00
" Orion	846	July 8.	" 17.	549 14	5 00	554 14
Barge Muskoka	481	" 23.	" 24.	96 20		96 20
Str. Rideau Queen	350	" 25.	" 26.	70 00		70 00
" Myles	1,198	" 26.	" 27.	169 80		169 80
Barge Star	321	Aug. 1.	Aug. 1.	64 20	5 00	69 20
Str. Wahcondah	1,747	" 9.	" 10.	224 70		224 70
Barge Acadia	374	" 13.	" 14.	74 80		74 80
Tug Geo. D. Seymour	76	" 19.	" 19.	20 00		20 00
Govt. tug Delisle	45	July 3.	July 22.	170 00		170 00
Str. Erin	1,237	Aug. 31.	Sept. 11.	1,050 10	18 00	1,068 10
Tug Bronson	137	Sept. 11.	" 13.	47 40		47 40
Barge Minnedosa	1,041	" 30.	Oct. 1.	154 10		154 10
Tug Mary P. Hall	96	Oct. 1.	" 1.	20 00	5 00	25 00
Str. Bothnia	833	" 9.	" 10.	162 46		162 46
" Hecla	1,110	" 10.	" 13.	316 40	3 00	319 40
" Orion	846	" 14.	" 17.	253 04		253 04
" Avon	1,417	" 19.	" 22.	390 08		390 08
" J. C. Howard	1,244	" 28.	" 31.	359 06	5 00	364 06
" Chicora	930	Nov. 2.	Nov. 3.	175 55		175 55
Tug Bronson	137	" 3.	" 4.	27 40	3 00	30 40
Barge Augustus	802	Dec. 3.	Dec. 4.	130 20	3 00	133 20
" Kildonan	523	" 5.	" 6.	102 30	3 00	105 30
Str. Chicora		Entry fee.		100 00		100 00
"	930	Dec. 17.	Mar. 19.	840 50	15 00	855 50
Str. D. D. Calvin	750	April 21.	April 22.	151 25		151 25
Barge Ceylon	908	" 25.	" 27.	172 58		172 58
" Augustus	802	" 29.	" 30.	151 20		151 20
" Hector	539	May 6.	May 7.	103 90		103 90
Str. Bothnia	833	" 12.	" 12.	154 30		154 30
Tug H. F. Bronson	137	" 25.	" 26.	27 40		27 40
Str. Chicora					30 00	30 00
Tug Jessie Hall	56	May 30.	May 31.	20 00		20 00
" Emerson	276	June 7.	June 7.	55 20		55 20
Ship Turbinia	1,064	" 18.	" 19.	156 40		156 40
Str. St. Lawrence					10 00	10 00
Govt. dredge Sir Richard, tug and 2 scows	250	April 30.	May 5.	130 50	6 20	136 70
	23,086			6,878 16	111 20	6,989 36

EDWARD T. SMITH,
Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1904.

PART VII

MISCELLANEOUS

ACTS OF PARLIAMENT, PASSED AT SESSION OF 1904, HAVING REFERENCE TO THIS DEPARTMENT.

CONTRACTS LET BY THE DEPARTMENT.

PROPERTY PURCHASED OR SOLD.

PROPERTY, LEASED TO OR BY THE DEPARTMENT.

CURATOR'S REPORT, NATIONAL ART GALLERY.

NAMES OF CHIEF OFFICERS OF THE DEPARTMENT.

NAMES OF OFFICIALS EMPLOYED ON SLIDES AND BOOMS.

NAMES OF PERSONS EMPLOYED ON GRAVING DOCKS.

NAMES OF ENGINEERS, FIREMEN AND CARETAKERS OF PUBLIC BUILDINGS.

AND THE OFFICIAL CORRESPONDENCE OF THE DEPARTMENT

FOR THE

FISCAL YEAR ENDED JUNE 30, 1904.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, December 10, 1904.

FRED GÉLINAS, Esq.,
Secretary of the Department of Public Works,
Ottawa.

SIR,—I have the honour to send you herewith the following statements concerning the transactions of the department during the last fiscal year with respect to contracts and property, and which are required for insertion in the annual report, 1903-04, viz.:—

No. 1.—Statement of contracts let by this department during the fiscal year ended June 30 last.

No. 2.—Statement of property purchased and sold by this department during the same period.

No. 3.—Statement of property leased to and by the said department during the same period; and

No. 4.—A list of some of the Public Acts of the Parliament of Canada passed at the last session and Orders in Council having reference to the department.

I have the honour to be, sir,

Your obedient servant,

J. A. CHASSE,
Law Clerk.

STATEMENTS

SHOWING

1ST.—CONTRACTS LET BY THE DEPARTMENT OF PUBLIC WORKS OF CANADA, FROM JUNE 30, 1903 TO JUNE 30, 1904.

2ND.—PROPERTY PURCHASED OR SOLD BY THE DEPARTMENT OF PUBLIC WORKS DURING THE FISCAL YEAR ENDED JUNE 30, 1904.

3RD.—PROPERTY LEASED TO AND BY THE DEPARTMENT OF PUBLIC WORKS DURING THE FISCAL YEAR ENDED JUNE 30, 1904.

No. 1.—CONTRACTS let by the Department of Public Works of Canada from the 30th June, 1903, to the 30th June, 1904.

Works.		Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS.				$ cts.
Nova Scotia.				
Amherst, Post Office building.	Supply of coal....	Maritime Coal Co., Ltd..	Sept. 5, 1903	188 76
Annapolis "	"	A. M. King	Aug. 24, 1903	203 35
Antigonish "	" ...	Acadia Coal Co., Ltd. ..	Sept. 18, 1903	93 93
Arichat "	"	Baptiste Girroir.....	Aug. 21, 1903	270 00
Baddeck "	"	Cape Breton Mining Coal Co.	Nov. 16, 1903	127 50
Dartmouth "	"	Minudie Coal Co., Ltd..	Oct. 21, 1903	159 20
Digby "	" ...	Wm. E. Van Blarcom...	Aug. 22, 1903	190 00
" "	Tower clock	Ferguson & Page.....	May 27, 1903	1,650 00
Guysborough "	Supply of coal ...	James Kenna..... ...	Oct. 5, 1903	
Halifax, Dominion Building.	"	Acadia Coal Co., Ltd. ..	Nov. 21, 1903	1,461 14
" Ass't. Rec. Genl's Office	"	"	" 21, 1903	
" Immigration Building	"	" ...	" 21, 1903	299 36
" Examining Wharehouse	" ...	"	" 21, 1903	
" Ass't. Rec. Genl's Office	"	Geo. E. Boak & Co.... .	Sept. 2, 1903	51 40
" Immigration Building	"	"	" 2, 1903	75 20
Liverpool, Post Office building	" ...	James Kenna.....	Oct. 5, 1903	210 00
Lunenburg "	"	John B. Young.....	" 5, 1903	205 50
New Glasgow "	" ..	Acadia Coal Co., Ltd. ..	Sept. 18, 1903	121 68
North Sydney "	"	Cape Breton Coal Mining Co	Nov. 16, 1903	178 75
Pictou "	"	Chs. W. Ives	Sept. 8, 1903	134 40
" Custom House	"	"	" 8, 1903	162 62
Springhill, Post Office	" .. .	Cumberland Ry. & Coal Co	Oct. 16, 1903	225 80
Sydney "	"	T. Routledge	Sept. 30. 1903	135 45
" Post'Office & Building.	Alterations, &c...	Rhodes, Curry & Co., Ltd	Feb. 27, 1904	15,750 00
Truro, Post Office Building.	Supply of coal....	Acadia Coal Co.....	Oct. 14, 1903	107 50
Windsor, Post Office & Building	"	"	Sept. 18, 1903	131 37
" "	"	M. H. Goudge & Son....	Aug. 31, 1903	184 80
Yarmouth "	"	Killam Bros....	Sept. 1, 1903	325 00
Prince Edward Island.				
Charlottetown, Post Office.	Alterations & additions to.....	H. S. Lowe Bros.....	Aug. 25, 1903	11,155 00
" "	Copper work to roof.	Stanley, Shaw & Co.....	June 13, 1904	4,278 00
" Public Building.	Alterations to savings bank.....	H. E. S. Lowe..... ...	Mar. 19, 1904	1,225 00
" "	Supply of coal	A. Pickard & Co... ..	Oct. 6, 1903	590 19
Montague, Post Office	" ...	Geo. Wightman.	Aug. 27, 1903	92 78
Summerside "	"	Joseph Read & Co ..	" 31, 1903	370 13
New Brunswick.				
Bathurst, Post Office.	Supply of coal....	John Russel & Co..	Sept. 12, 1903	450 19
Chatham "	"	"	" 12, 1903	297 07
" "	"	Minudie Coal Co., Ltd .	Oct. 3, 1903	86 50
Dalhousie "	"	" .	" 3, 1903	57 87
" "	"	Joseph H. Taylor.....	Sept. 28, 1903	207 37
Fredericton "	"	Patrick Farrell	Oct. 22, 1903	289 88
" Construction of Officers' new stables..		C. J. B. Simmons.....	July 9, 1903	2,110 00
" " of Sergeant-Majors quarters....		"	Aug. 3, 1903	2,118 00
Marysville, Post Office.	Supply of coal...	Minudie Coal Co., Ltd..	Oct. 21, 1903	
Moncton "	"	" .	Oct. 3, 1903	260 41
Newcastle, Post Office.	Supply of coal....	R. R. Call....	Sept. 12, 1903	282 88
Partridge Island, Quar. Stn.	Heating apparatus	R. E. Fitzgerald.....	Jan. 27, 1904	1,900 00
" "	Electrical plant...	The Acetylene Construction Co.	May 15, 1904	4,625 00
Richibucto, Public Building.	Heating apparatus	Frank Powers	Oct. 29, 1903	799 00
" "	Fittings..... .	James Reid.....	April 14, 1904	2.000 00

No. 1.—CONTRACTS let by the Department of Public Works, &c.—*Continued.*

Works.		Names of Contractors.	Date of Contract	Amount.
PUBLIC BUILDINGS—*Continued.*				$ cts.
New Brunswick—Concluded.				
Richibucto, Post Office.	Supply of coal....	J. & T. Jardine.....	Sept. 18, 1903	
St. John "	"	R. P. & W. F. Starr	Oct. 21, 1903	53 96
" Savings Bank	"	"	" " "	31 38
" Custom House	"	"	" " "	38 75
" Immigrant Building	"	"	" " "	128 35
" West, Post Office	"	Vroom & Arnold.. ..	" " "	40 50
" "	"	"	" " "	752 70
" Savings Bank	" .. .	"	" " "	269 66
" Custom House	" ..	"	" " "	1,679 64
" Immigrant Building	" ...	"	" " "	1,178 43
" Post Office	"	Minudie Coal Co., Ltd..	" " "	25 38
" Savings Bank	"	" ..	" " "	21 75
" Custom House	" .. .	" ..	" " "	21 00
St. Stephens, Post Office	"	Purves & Graham.....	Sept. 29, 1903	166 80
Sussex "	"	C. N. Short..	Oct. 12, 1903	428 95
Tracadie, Lazaretto	"	R. R. Call....	Sept. 4, 1903	876 61
" "	Disinfecting apparatus	P. Campbell & Co.....	May 31, 1904	1,315 00
Woodstock, Post Office.	Supply of coal....	Purves & Graham.....	Sept. 29, 1903	279 29
Quebec.				
Acton Vale.	Construction of Post Office bldg ..	Joseph Bourque.....	June 28, 1904	10,250 00
Aylmer, Post Office.	Supply of coal.....	J. G. Butterworth & Co.	Sept. 14, 1903	117 75
Berthierville "	"	Lamarche & Boulanger..	" 29, 1903	105 77
Coaticook "	"	W. C. Webster & Son...	Aug. 19, 1903	511 53
Drummondville "	"	The Pensylvania Coal Co	Oct. 2, 1903	160 00
Farnham "	"	J. A. Léquin.	Aug. 20, 1903	56 00
Fraserville "	" ...	Nap. Dion..	Sept. 15, 1903	278 75
Hochelaga "	"	T. F. Moore Co.....	Oct. 2. 1903	168 78
Hull "	"	Hull Coal Co.	Aug. 28, 1903	76 51
Joliette "	"	S. Bourgeois.....	" 29, 1903	237 96
Lachine "	"	Joseph Allard	Oct. 8, 1903	162 00
Laprairie "	"	J. B. H. Beauvais.. . .	Aug. 28. 1903	105 83
L'Assomption "	" ...	J. E. Archambault	Sept. 21, 1903	212 50
" "	Heating apparatus	Alex. Mackay & Co.....	Oct. 20, 1903	855 00
" Public Building.	Fixtures.....	E. Piché.....	Jan. 13, 1904	1,175 00
Montreal, Post Office.	Rep'rs to elevators	The Fensom Elevator Co., Ltd.....	" 23, 1904	5,700 00
" Ex'g Warehouse.	Six freight elevators	" " ..	Mar. 28, 1904	23,000 00
" "	Supply of coal....	T. F. Moore Co.....	Oct. 2, 1903	2,523 01
" Custom House	"	L. Cohen & Son.	" " "	750 82
" Post Office	"	Wilson Frères	" " "	877 50
" Revenue Building	"	"	" " "	250 05
Quebec, Cullers' Office	"	Joseph Gingras	Nov. 9, 1903	194 30
" Marine Agency	"	"	Oct. 9, 1903	504 64
" St. Roch Post Office	"	"	" " "	32 24
Quebec, Custom House.	Supply of coal..	Archer & Co.....	Nov. 9, 1903	111 56
" Ex'g. Warehouse	"	"	" 9, 1903	1,746 22
" Immigrant office	"	"	" 9, 1903	245 00
" Post Office	"	"	" 9, 1903	904 24
" Custom House	"	M. Madden.	" 9, 1993	838 82
" Iron Foundry.	Installation of elect. light.	C. Vézina	Mar. 7, 1904	545 00
" "	Heating apparatus ...	O. Picard et fils.....	May 16, 1904	1,565 00
Richmond, Post Office.	Supply of coal.....	J. D. Smith	Oct. 8, 1903	274 89
St. Henri "	"	T. F. Moore Co.....	" 2. 1903	202 84
St. Hyacinthe "	"	C. Rouleau et fils. ...	" 15, 1903	468 02
"	Construction of Inland Revenue building	Paquet & Godbout.. ...	July 30, 1903	21,089 00
"	Public Bldg. Additional excavation.	"	Sept. 2, 1903	654 00
"	Inland Revenue Bldg. Heating apparatus.	Pierre Therrien.	June 9, 1904	1,100 00

No. 1.—CONTRACTS let by the Department of Public Works, &c.—*Continued.*

Works.	Names of Contractors.	Date of Contract	Amount.
PUBLIC BUILDINGS—*Continued.*			$ cts.
Quebec—Concluded.			
St. Jérôme, Post Office. Supply of coal	Chas. Godmer	Aug. 31, 1903	206 75
St. Johns " "	Jules Audette	" 27, 1903	103 56
Sherbrooke " "	Jean Huot	Sept., 30, 1903	357 30
Sorel " "	Alfred Lavalée	Aug. 27, 1903	285 00
" Shipyard "	The Nova Scotia Steel and Coal Co	June 9, 1904	49,800 00
" Post Office. Installation of elect. lights	J. Rousseau & Co.	April 25, 1904	675 00
Thetford Mines. Construction of Post Office	Dusseault & Pageau	Aug. 8, 1903	6,735 75
Three Rivers, Post Office. Supply of coal	John Ryan & Son	" 20, 1903	187 44
" Custom House "	"	" 20, 1903	349 74
Valleyfield, Post Office "	Besner & Charles	Sept. 9, 1903	52 00
" Construction of public building	Théodore Bélanger	" 14, 1904	32,500 00
Victoriaville, Post Office. Supply of coal	F. Beauchesne	" 25, 1903	213 52
Ontario.			
Alexandria. Construction of a Post Office building	Joseph Bourque	Oct. 23, 1903	10,750 00
Almonte, Post Office. Supply of coal	Wm. McArthur	" 9, 1903	189 00
Amherstburg " "	Falls Bros	" 6, 1903	274 87
Arnprior " "	J. S. Moir	Sept. 14, 1903	237 06
Barrie " "	The Sargeant Co	Aug. 25, 1903	245 00
Belleville " "	C. C. Leavens	Sept. 15, 1903	663 00
Berlin " "	The Connel Anthracite Mining Co	Oct. 5, 1903	229 29
" Public Bldg. Lighting and fixtures	The Berlin Electric Co	Dec. 16, 1903	534 00
Bowmanville. Construction of Post Office and building	Wm. Stuart	Nov. 2, 1903	17,768 80
Brampton, Post Office. Supply of coal	Peaker & Son	Oct. 1, 1903	197 82
Brantford " "	The Brantford Coal Co., Ltd	Aug. 28, 1903	178 29
" Drill Hall. Additions and alterations to	The Schultz Bros. Co., Ltd	June 9, 1904	25,750 00
Brockville, Post Office. Supply of coal	Central Canada Coal Co	Aug. 21, 1903	399 67
Carleton Place " "	Taylor Bros. & Co	Sept. 28, 1903	181 25
Cayuga " "	A. J. Grant	Aug. 29, 1903	105 12
Chatham " "	A. R. Crowe	" 19, 1903	175 33
Clinton " "	Howland Bros	" 29, 1903	125 30
" Public Building. Fittings, plumbing, &c.	S. S. Cooper	" 26, 1903	2,500 00
Cobourg. Post Office, Supply of coal	Geo. Plunkett	" 19, 1903	215 30
" Construction of Armoury	D. S. Booth	Feb. 24, 1904	35,550 00
Cornwall, Post Office. Supply of coal	A. F. Mulhern & Co	Sept. 29, 1903	300 00
Deseronto, Post Office. Supply of coal	The Rathbun Co	Oct. 5, 1903	520 80
Dundas " "	Chas. Sturrock	" 2, 1903	45 65
" Drill Hall. Installation of elect. light	H. Aukland	Feb. 9, 1903	204 75
Fort William, Post Office. Supply of coal	Louis Walsh Coal Co	Oct. 19, 1903	221 25
" Pub. Build'g. Heating apparatus	Alex. Cameron	" 7, 1903	1,705 00
" Post Office and Customs. Fittings	Robert Cameron	Jan. 9, 1904	3,600 00
Galt, Post Office Supply of coal	Scott & Hogg	Oct. 6, 1903	184 00
Gananoque " "	Cowan & Britton	" 24, 1903	97 57
" Custom House "	" "	" 24, 1903	148 37
Goderich, Post Office "	Wm. Lee	Aug. 22, 1903	390 77
Guelph " "	M. F. Cray	" 21, 1903	339 91
" Public Building. Works in attic	L. C. Wideman	May 9, 1904	2,860 00
Hamilton, Post Office. Supply of coal	The Rogers Coal Co	Nov. 5, 1903	1,019 10
Ingersoll " "	J. S. Smith	Aug. 31, 1903	341 92
Kingston " "	P. Walsh	" 25, 1903	274 00
" Custom House "	"	" 25, 1903	184 95
" " Painting, &c	Robinson Bros	Dec. 29, 1903	520 00
" R.M.C. Gymnasium. Apparat. & fittings	Ketchum & Co	Feb. 18, 1904	6,185 00
" Custom House. Elect. appliances	Breck & Halliday	Dec. 28, 1903	664 00
Lindsay, Post Office. Supply of coal	McLennan & Co	Aug. 19, 1903	211 73
" " "	R. E. Clisdell	Oct. 13, 1903	
" Custom House "	"	" 13, 1903	

No. 1.—CONTRACTS let by the Department of Public Works, &c.—*Continued.*

Works.		Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS—*Continued.*				$ cts.
Ontario—Continued.				
Lindsay, Drill Hall.	Heating apparatus.	Elliott Bros	May 12, 1904	5,450 00
Napanee, Post Office.	Supply of coal	F. F. Van Luven	Aug. 27, 1903	270 00
Niagara Falls "	"	J. E. Hutchings	Sept, 14, 1903	125 37
" Customs.	Wiring and fixtures	R. F. Carter Electric Co.	March 8, 1904	121 50
Orangeville, Post Office.	Supply of coal	Jas. R. Lathwell	Oct. 2, 1903	194 75
Orillia "	"	Andrew Tait	Aug. 25, 1903	145 00
Ottawa, Exp. Farm.	"	McCullough & Co	Sept. 5, 1903	1,075 38
" Public Buildings	"	John Heney & Son	April 22, 1904	44,690 55
" Printing Bureau.	Addition for storage.	Wm. Doran & R. M. Devlin	Jan. 13, 1904	9,100 00
" Astronomical Observatory.	Heat'g appar.	Butterworth & Co.	March 3, 1904	2,749 00
" "	Structural work to dome	The Warner & Swasey Co	" 15, 1901	4,740 00
Paris, Post Office.	Supply of coal	Geo. E. Taylor	Aug. 31, 1903	120 42
Peterborough "	"	The McClellan Co.	Sept. 5, 1903	180 46
Petrolia "	"	R. Jackson & Son	Oct. 1, 1903	256 75
Picton "	"	The Rathbun Co	" 5, 1903	226 00
Port Arthur "	"	Louis Walsh Coal Co	" 19, 1903	187 00
Port Hope "	"	Wright & Rosevear	Sept. 28, 1903	232 00
Prescott "	"	James Buckley	Oct. 20, 1903	234 00
" Custom House	"	"	" 20, 1903	409 50
Rat Portage, Post Office	"	Windatt & Co	Oct. 26, 1903	215 72
St. Catharines "	"	W. H. McCordick	Sept. 19, 1903	255 40
" Construction of Drill Hall		M. Sullivan & W. Langdon	June 2, 1904	79,829 00
St. Thomas, Post Office.	Supply of coal	F. H. Ferguson	Oct. 1, 1903	350 00
Sarnia "	"	Geo. Shaw	Sept. 8, 1903	420 49
" Public Building.	Granolithic walks.	Wm. Ellis	July 24, 1903	527 00
" "	Grading, &c	Simpson & McDonald	" 24, 1903	300 00
Sault Ste. Marie.	Construct. of Post Office b'd'g	McPhail, McCarty & Wright	Nov. 23, 1903	54,000 00
Smith's Falls, Post Office.	Supply of coal	A. Mackenzie & Co	Aug. 27, 1903	155 25
Stratford, "	"	J. E. Hutchings	Sept. 14, 1903	229 90
Strathroy, "	"	Alex. Reed	Aug. 28, 1903	348 67
Toronto, Custom House.	"	James H. Milnes & Co	Oct. 5, 1903	465 44
" Examining Warehouse.	"	" "	" 5, 1903	555 72
" Post Office.	"	" "	" 5, 1903	974 21
" " Station 'C.'	"	" "	" 5, 1903	
" Revenue Office.	"	" "	" 5, 1903	253 55
" Junction, Post Office & Customs.	Vaults, slate roof, &c	Joy & Needham	Aug. 4, 1903	1,524 00
" Post Office elevator		The Fensom Elevator Co., Ltd	Oct. 3, 1903	6,200 00
" " fittings		D. Carlyle	" 10, 1903	735 00
" Assistant Rec. General's Office.	New treasury safe	Toronto Safe Works	" 10, 1903	2,100 00
" Examining Warehouse.	Addition to (Express Department)	Brown & Love	May 31, 1904	38,600 00
Trenton, Post Office.	Supply of coal	J. Funnell	Aug. 31, 1903	172 50
Walkerton, "	"	S. W. Vogan	Sept. 17, 1903	254 00
Windsor, "	"	Robert J. Cleminson	Oct. 16, 1903	467 75
Wingham.	Construction of public building	S. S. Cooper	June 24, 1904	15,500 00
Woodstock, Post Office.	Supply of coal	The MacIntosh Coal Co.	Sept. 5, 1903	261 62
Manitoba.				
Brandon, Post Office.	Supply of coal	Robert Purdon	Sept. 16, 1903	892 58
" Exp. Farm.	"	"	" 16, 1903	231 20
" "	"	Windatt & Co	" 21, 1903	149 49
Portage la Prairie, Public Bldg.	Supply of coal	"	Oct. 26, 1903	449 67
Winnipeg, Post Office.	"	D. E. Adams	Aug. 31, 1903	2,137 24
" Custom House	"	Harstone Bros	" 31, 1903	904 40
" Immigt. Office and Shed	"	"	" 31, 1903	1,512 99
" " Hospital	"	"	" 31, 1903	
" Indian Office & Crown Timber Office.		"	" 31, 1903	
" Exam'g. Warehouse.	Supply of coal	"	" 31, 1903	533 62

No. 1.—CONTRACTS let by the Department of Public Works, &c.—*Continued.*

Works.	Names of Contractors.	Date of Contract	Amount.
PUBLIC BUILDINGS—*Continued.*			$ cts.
North-west Territories.			
Carnduff, Immigrant Building. Supply of coal	Fairbairn Bros	Sept. 2, 1903	67 50
Craik. Construction of Immigrant building	Wm. Hoge & Jas. H. Thomson	Mar. 30, 1904	2,025 00
Davidson " "	" "	" 30, 1904	2,025 00
Edmonton, Dominion Land. Supply of coal	Milner & Blatchford	Sept. 2, 1903	79 50
Indian Head, Experimental Farm "	Geo. Thompson	" 3, 1903	200 00
Lethbridge, Post Office "	The Alberta Ry. Coal Co.	" 15, 1903	162 50
Macleod, Custom House "	H. A. F. Grady	" 15, 1903	
" Court House "	"	" 15, 1903	57 65
" " Heating apparatus	Martel & Langelier	Nov. 30, 1903	1,400 00
" " Fittings	Pat. Navin	Jan. 12, 1904	465 00
Moose Jaw " Supply of coal	Robert Beard	Oct. 8, 1903	232 20
Moosomin " "	Windatt & Co	Sept. 21, 1903	306 05
" " "	T. H. Bristow	" 1, 1903	151 24
Red Deer. Construction of Court House	Geo. A. Johnson & A. Tait	" 7, 1903	12,500 00
" Dominion Land Office. Supply of coal.	Joseph M. Smith	" 6, 1903	
Regina, Court House "	The Smith & Ferguson Co.	Sept. 26, 1903	37 50
" Post Office and Dominion Land Office. Supply of coal	" "	" 26, 1903	52 50 37 50
" Construction of Immigrant building	D. C. McDougall	Mar. 14, 1904	4,500 00
" Court House. Supply of coal	Whitmore Bros	Sept. 2, 1903	797 50
Regina, Post Office. Supply of coal	Whitmore Bros	Sept. 2, 1903	128 94
" Dominion Land Office. "	"	" 2, 1903	580 00
Wolseley, Court House. "	McGee & Thompson	" 15, 1902	282 75
Yorkton, Immigration Building. "	Wm. Simpson	" 21, 1903	336 86
" Court House. Heating apparatus	Martel & Langelier	Oct. 21, 1903	1,200 00
British Columbia.			
Kamloops, Drill Hall. Fittings	D. H. Campbell	Aug. 1, 1903	510 00
Nanaimo, Post Office & Building, addition to	Alex. Forrester	May 4, 1904	14,475 00
Nelson, Public Building. Electric light	Kootenay Elec. Supply & Construction Co	Oct. 6, 1903	1,047 00
Rossland, construction of drill shed	Wm. Geo. Gillett	June 13, 1904	17,395 00
HARBOURS AND RIVERS.			
Nova Scotia.			
Big Harbour, construction of wharf approach	Reid & Archibald	Sept. 28, 1904	3,875 00
Big Pond " "	Hugh McDonald	Jan. 12, 1904	7,720 00
Iona, extension to wharf	K. Sweet & A. W. Girroir	May 20, 1904	10,230 00
L'Ardoise, works to connect breakwater at	Hugh McDonald	Dec. 29, 1903	24,880 00
McKay's Point, Public wharf	Wm. J. Landry	April 30, 1904	5,442 00
Pembroke, Breakwater	J. E. & H. Bigelow	Mar. 28, 1904	7,970 00
Port Hawkesbury, removal of cribwork & ballast on site of wharf	A. W. Girroir	Oct. 26, 1903	2,900 00
Tenecape, Breakwater	Jno. E. & Halle Bigelow	May 17, 1904	8,370 00
Victoria Beach, Pile work pier	Reid & Archibald	June 15, 1904	93,890 00
West Bay, 'The Points.' Pile wharf	Hugh McDonald	Sept. 1, 1903	2,980 00
Prince Eduard Island.			
New London, Breakwater	T. P. Cullen	May 3, 1904	5,900 00
New Brunswick.			
Cheticamp Point, construction of wharf	Reid & Archibald	July 16, 1903	13,880 00
Miscou " "	Jno. Burns & T. P. Charleson	April 27, 1904	13,700 00
Negro Point, supply of stone for breakwater	W. E Scully	Nov. 17, 1903	2,250 00
Petit Rocher, construction of breakwater	Simon McGregor	May 31, 1904	32,900 00

No. 1.—CONTRACTS let by the Department of Public Works, &c.——*Concluded.*

Works.	Names of Contractors.	Date of Contract	Amount.
PUBLIB BUILDINGS—*Continued.*			$ cts.
Quebec.			
Anse aux Gascons, Breakwater	Jno. Burns & T. P. Charleson	April 27, 1904	15,495 00
Bonaventure, East "	" "	" 27, 1904	15,690 00
Desjardins, Allumette Island. Wharf	Thomas Moran	Jan. 8, 1904	9,953 67
Douglastown, Pier	Jno. Heney & H. Smith	April 28, 1904	17,549 00
Escoumains, Wharf at Les	T. Bernier & G. Beaulieu	May, 7, 1904	11,478 00
Father Point, extension to wharf	Jno. Heney & H. Smith.	" 27, 1904	44,300 00
Laprairie, concrete protection walls	Amiot & Lemay	Nov. 10, 1903	29,650 00
Lotbinière, roadway from shore to Isolated block	T. Bernier, & G. Beaulieu	May 7, 1904	13,400 00
Maguasha, Wharf	T. P. Charleson	June 18, 1904	7,500 00
Newport, (Gaspé) additional length to breakwater	Jno. J. Lyons & James White	Oct. 17, 1903	13,388 00
Paspebiac, Wharf	Jno. Burns & T. P. Charleson	May 31, 1904	19,695 00
Point aux Trembles, Landing pier	Dusseault & Pageau	June 28, 1904	33,775 00
Port Daniel, extension to wharf	J. J. Lyons & J. White	May 30, 1904	21,890 00
Portage du Fort, superstructure of highway bridge	The Locomotive & Mach. Co., Ltd	Aug. 25, 1903	9,750 00
Quebec, harbour improvements, extension of 500 feet	Dusseault & Lemieux	May 25, 1904	239,942 87
St. Charles de Caplan, Breakwater	J. Burns & T. P. Charleson	" 31, 1904	13,700 00
Ste. Famille, (Island of Orleans) addition to wharf	P. T. C. Dumais & V. Giroux	" 28, 1904	17,664 00
St. Godfroi, Breakwater	J. Burns & T. P. Charleson	" 31, 1904	19,300 00
Three Rivers, work to ice-breakers	Randolph McDonald	Aug. 1, 1903	5,400 00
Touladie, building of dams at	Fraser & Son	Sept. 16, 1903	2,500 00
Ontario.			
Cumberland, Wharf	John D. Warwick.	May 31, 1904	6,275 00
Grand Bend, Wharf and road approach	" "	March 26, 1904	21,388 00
Honora Bay, Manitoulin Island, Wharf	G. Kastner & D. Porter.	Feb. 22, 1904	7,900 00
Midland, Pile wharf	A. A. McDonald	Nov. 2, 1903	19,492 00
Pembroke "	The W. J. Poupore Co., Ltd	Feb. 19, 1904	41,999 00
Port Colborne. timber & concrete cribwork to breakwater	M. J. Hogan	June 8, 1904	179,000 00
Port Colborne, several works to breakwater	"	April 13, 1904	Sch. of rates.
" " "	"	March 8, 1904	39,000 00
Sault Ste. Marie, extension to Govt. wharf	Jas. Battle	April 12, 1904	65,000 00
Vessels, Dredges and Plant.			
Construction of condensing outfit and triple expansion engine for pump dredge *W. S. Fielding*	The Polson Iron Works.	Sept. 30, 1903	14,915 00
Construction of two boilers for dredge *Joseph Israel Tarte*	John Inglis Co., Ltd	Jan. 9, 1904	18,400 00
" " "	The Bertram Engine Works Co	" 9, 1904	18,400 00
Construction of a square fire box tug boiler for tug *Sir Hector*	The Polson Iron Works.	March 31, 1904	3,440 00
Supply of electric current for operation of machines, &c., Govt. shipyard at Sorel, P.Q.	The Sorel Eleetric Co.	April 28, 1904	9,000 00
Construction of boiler for dredge *St. Louis*	P. J. Powers & Co	June 8, 1904	675 00
Telegraphs.			
Isle aux Coudres, P.Q., maintenance of telephone line	Hector Lemieux	July 16, 1903	150 00
Supply of 2,280 poles for telegraph line between Bersimis & Godbout, P.Q.	Jos. & Nérée Tremblay	Dec. 23, 1903	per pole 1 90

No. 2.—STATEMENT of properties purchased or sold by the Department of Public Works during the Fiscal Year ended June 30, 1904.

Date of Conveyance.	Vendors	Purchasers.	Description of Property.	For what Purpose.	Area.	Price.
1903.						$ cts.
July 15	D. A. Macdonald	His Majesty	Part of lot No. 17 N.E. corner of Main and St. Catherine sts., Alexandria, Ont.	Site—Public building.		3,500 00
" 15	Helen Fryer	"	Portion of lots 13, 14, 15, 10, Selkirk, Man		$\frac{8275}{10000}$ of acre.	
Aug. 3	His Majesty	The Locomotive and Machine Co., Montreal, Ltd.	Sale of old iron, old Chaudiere Bridge			1 00
						p. ton, 12 00
" 19	Elz. Paquet	His Majesty	Part of lot Nos. 112 and 110, St. Nicholas, P.Q.	Approach to wharf.		250 00
Sept. 1	Kate McNeil & al.	"	Lot between Main Post Road and shore, East Bay, Big Pond, N.S	Approach to wharf	9,120 sq. ft.	15 00
" 9	Wm. Snow & al	"	Land, Black Cove, Ecum Secum, N.S.	Wharf	$\frac{1}{10}$ of acre	2 00
" 10	Manly Pye & al	"	" "	"	$\frac{1}{4}$ of acre	8 00
" 29	John Grice & al	"	Lots 1, 2, Block 8, Clayoquot, B.C.	For telegraph station		1 00
Oct. 6	B. H. Kirkpatrick	"	Part of section 7, Renfrew Dist., B.C.	" "	1 acre	425 00
" 9	X. Lemelin	"	Lot No. 195, St. Francois, Island of Orleans, P.Q.	Approach to wharf	39,662 sq. ft.	125 00
" 9	X. Lepage	"	Lot No. 196 " "	" "	19,500 sq. ft.	62 50
" 9	S. Emond	"	Lot No. 197 " "	" "	20,570 sq. ft.	62 50
" 28	M. Connolly	"	Dredging plant, *International*.			125,000 00
Nov. 13	Municipality, Anse aux Gascons	"	Lot No. 435, 1st Range, L'Anse aux Gascons, P.Q.	Wharf	3,000 sq. ft.	1 00
" 21	Municipality of Port Daniel	"	Lot No. 190, Port Daniel East, P.Q.	Wharf	$\frac{1}{2}$ of acre	1 00
" 21	Annie Spence	"	Township lot 17, Concession 'A,' town lot No. 8, Block 'C,' Cobourg, Ont	Armoury		2,000 00
" 21	Francois Skene	"	Land at Shegawake, P.Q.	Wharf and approach.	5,000 sq. ft.	1 00
" 23	S. LeBrasseur	"	Part of lot No. 25, St. Godefroi, P.Q.	Wharf	7,500 sq. ft.	1 00
Dec. 7	John Wofer	"	Sale of land, Maguasha, P.Q.	Road to wharf	25 x 100 ft	1 00
" 7	Municipality of Nouvelle	"	Land at Maguasha, P.Q	Site for wharf	25 x 100 ft	1 00
" 9	Sam. N. Miller & ux	"	Land at Middleton, N.S.	Armoury	$\frac{88}{100}$ of acre	550 00
" 9	John McLeod & ux	"	Strip of land, North Bay, Ingonish, N.S.	Approach and right of way	21,620 sq. ft.	100 00
" 21	Arthur Garrett	"	Land at St. Bonaventure East, P.Q.	Wharf	5,000 sq. ft.	1 00
" 22	J. A. Campbell	"	Land at New Richmond, P.Q.	Approach to wharf.	5,000 sq. ft.	1 00
" 22	"	"	Part of lot 55, New Richmond, P.Q.	Wharf and approach.	5,000 sq. ft.	1 00
" 23	Archd. Stewart & al	"	Lands, Township of Nepean, Appin Place, Ottawa	Public building.	400 acres	75,000 00
" 24	Shieves Lumber Co., Ltd.	"	Land at Campbellton, N.B.	Approach	2,795 ft.	1,000 00

"	25	Mary Finnigan and husband	"	Town lot No. 3. Oshawa, Ont.	Public building		2,900 00
"	28	J. & N. Denis	"	Part of lot No. 306, Pasjebiac, P.Q.	Wharf	2,400 sq. ft.	5 00
"	29	M. Douglas	"	Part of lot No. 67, C. Woodstock, Ont	Public building		1,100 00
"	30	F. Brière	"	Part of lot 53, St. Charles de Caplan, P.Q.	Wharf	5,000 sq. ft.	1 00
1904.							
Jan.	2	His Majesty	Adelard M. Gauthier	Strip of lands, Three Rivers, P.Q.	Private enterprise	144 x 9 ft.	Free grant.
"	29	M. H. Dubois	His Majesty	Lots Nos. 278, 279, 280 and 281, Acton Vale	Public building		2,500 00
"	29	Thos. Gregory & ux	"	Lots Nos. 18, 19, Wingham, Ont.	" "	$\frac{44}{100}$ of acre	5,000 00
"	30	His Majesty	Thos. Lawson.	Sale of boilers, Ottawa.	Private enterprise		1,275 00
Feb.	8	Philippe Fraser & ux	His Majesty	Land, Port Bévis, Big Harbour, N.S	Wharf	1,676 sq. ft.	1 00
"	13	Vincent McLean & ux.	"	Land at McKay's Point, N.S.	"	20,120 sq. ft.	50 00
"	15	His Majesty	Dr. J. D. Maher	Land at Portland, N.B.	Private enterprise		5,801 00
"	15	C. H. Hall & ux	His Majesty	Land at East River, N.S.	Wharf	$\frac{33}{100}$ of an acre	300 00
"	18	N. Shore Power Ry. & Navigation Co	"	Sale of lands at Seven Islands, P.Q.	Government enterprise		1 00
"	20	Athanase Delisle	"	Lot No. 87*a*, Pointe aux Trembles, P.Q	Approach to wharf		300 00
Feb.	23	M. G. Hardy	His Majesty	Water lot, Grondines, P.Q.	Wharf	10·78 x 120 ft.	2,000 00
"	24	Peter Devine & al	"	Land at Musquash, N.B., (Dipper Harbour)	Right of way	$\frac{38}{100}$ of an acre	150 00
Mch.	1	His Majesty	Hamilton Bridge Works Co., ltd	Lands and premises, part of Lot 16, 1st and 2nd Concession, Hamilton, Ont.	Private enterprise		1,500 00
"	7	Robert G. Barrett	His Majesty	Lot No. 6, Bridgeburg, Ont.	Public building		770 00
"	9	Enos Baker	"	Land, Baker's Point, East Jeddore, N.S	Site for wharf	$\frac{24}{100}$ of an acre	1 00
"	22	John McDonald	"	Land, Point Prim, N.S.	" "		350 00
"	28	J. McInnes	"	Land, Breton Cove, N.S., and right of way.	" "	3,600 sq. ft.	120 00
"	29	L. H. Desjardins	"	Lot No. 228, Terrebonne, P.Q	Public building	65 ft. wide by depth of lot	1,500 00
"	30	Robert E. Finn.	"	Lands, Chezzetcook East, N.S.	Public wharf	$\frac{1}{8}$ rods	50 00
April	2	His Majesty	Corporation of Acton, P.Q.	Lands at Acton, P.Q.	Public building		600 00
"	2	La Compagniedes bateaux a vapeur de Deschambault & Lotbinière.	His Majesty	Sale of wharf at Deschambault, P.Q.	Public wharf		500 00
"	5	Conrad Deneau	"	Bill of sale of tug *Carmelia*	Government purposes.		13,000 00
"	7	Frs. Viau de St. Mars	"	Land Lot No. 43, Longueuil, P.Q	Public building	118 x 85 ft.	2,800 00
"	8	A. Chevalier	"	Lands at St. Louis du Mile End, P.Q	"		5,400 00
"	18	Peter Dixon & ux	"	Land, North Head, Grand Manan, N.B.	Wharf		1 00
"	18	Alex. Lumsden	"	Bill of sale, steam screw *Dora*	Government purposes.		3,000 00
"	18	Alex. McIntosh	"	Land at Pleasant Bay, N.S	" "	1,050 ft.	1 00
"	19	H. S. Creighton & al	"	Lots Nos. 26, 27, 28, 29, 30, 31, Halifax, N.S.	Detention hospital	36,000 ft.	900 00
"	22	Dr. C. E. Graham	"	Lots 1a. 2a, 2b, 5th Range, Hull, P.Q.	Government purposes.		2,800 00
"	25	H. Paxton Baird	"	Land, Woodstock, N.B	Armoury	100 x 160 ft.	6,000 00
"	27	Municipality St. Pierre de la Malbaie	"	Land, St. Pierre de la Malbaie, P.Q.	R'dw'y to Gov. b'kw'tr	25 x 26.	Free grant.
"	29	Geo. E. Beauchemin	"	Bill of sale, tug *Nile*	Government purposes.		2,500 00
May	6	Alex. McKay.	"	Land at Sydney Mines, N.S.	Public building	9,165 sq. ft.	4,500 00

No. 2.—STATEMNET of properties purchased or sold by the Department of Public Works, &c.—*Continued.*

Date of Conveyance.	Vendors.	Purchasers.	Description of Property.	For what Purpose.	Area.	Price.
1904.						$ cts.
May 19	Elz. Savard	His Majesty	Park Savard, shore of River St. Charles, Quebec	Government purposes		14,000 00
" 27	Corporation of Guelph	"	Land, City of Guelph, Ont	Armoury		5,000 00
June 4	Ernest Murré	"	Land, St. Gédéon les Isles, P.Q.	Appr. to wharf		1 00
" 4	Wm. Gaudrault	"	" "	" "		1 00
" 10	Arch. McKenzie	"	Land, Campbellton, N.B.	For public building		4,000 00
" 11	Grand Valley Co., ltd.	"	Strip of land East Point, Grand Vallée, P.Q.	Wharf and right of way	48,000 sq. ft.	1 00
June 21	John N. Lester	"	Land at Burford, Ont	Armoury	90 x 150 ft	250 00
" 23	The North Shore Power R'y & Navigation Co	"	Works and lands at Seven Islands, P.Q.	Government purposes		55,919 00
" 24	Shives Lumber Co., ltd	"	Land at Campbellton, N.B.	Ferry land	7,282 sq. ft.	2,000 00

No. 3.—STATEMENT of Properties Leased to and by the Department of Public Works during the Fiscal Year ended June 30, 1904.

Date of Lease.	Lessors.	Lessees.	Property Leased.	For what purpose.	Duration of Lease.	Annual Rental.
1903.						
July 1....	G. W. Pacaud.....	His Majesty.....	Store, St. Catherine St., Montreal	Post office purposes..	5 years	$ 2,200 per annum.
Aug. 24...	His Majesty.....	T. Malone & Burrill....	Land, part of lots 407, 408, Cap de la Magdelaine, Q.	Mill purposes.....	10 "	50 "
Sept. 25....	A. L. Pacaud.....	His Majesty	Ground floor bldg., St. Catherine St., Montreal.	Post office purposes..	5 "	2,200 "
" 30....	The Ottawa Investment Co., Ltd.	"	Stone bldg., s.-w. corner Metcalfe and Queen Sts., Ottawa, Ont.	Governm'nt purposes	1 "	1,000 "
Oct. 17 ...	Jas. W. Woods.....	"	Stone bldg., Slater St., Ottawa, Ont	Militia Department..	.....	11,040 "
Nov. 2....	His Majesty.....	Frontenac Cereal Co., Ltd...	Land—Dry dock, Kingston, Ont..	Private enterprise ...	21 years	250 "
Dec. 22....	His Majesty.....	Upper Ottawa Improvement Co.	Portion of Govt. reserve, Victoria Island, Ottawa, Ont.	"	10 "	2 "
1904.						
Feb. 20....	D. Wood.....	His Majesty.....	Upper floor of warehouse, Teulon, Man.	Immigrat'n purposes	8 months	15 per month.
Mar. 14.	R. Karnagel.....	"	Building, Didsbury, N.W.T.....	"	6 "	12 "
" 22 ...	C. T. Daykin.....	"	Building, Lacombe, N.W.T	"	9 "	13 "
April 1....	E. A. Bush.....	"	Upper floor bldg., Leduc, N.W.T.	"	8 "	10 "
" 15....	Jas. W. Woods.....	"	Building on Queen St., Ottawa...	Railway Commission	5 years	5,300 per annum.
June 10....	Municipality of Ste. Cunégonde.	"	Ground floor of Municipal Bldg., Ste. Cunégonde, Montreal, Q.	Post office.....	21 "	1,750 "

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, December 10, 1904.

J. A. CHASSÉ,
Law Clerk.

LIST

OF SOME OF THE

ACTS OF PARLIAMENT

PASSED AT THE SESSION OF 1904

HAVING REFERENCE TO THE

DEPARTMENT OF PUBLIC WORKS OR WORKS UNDER ITS CHARGE

LIST of some of the Public Acts of the Parliament of Canada, passed at the Fourth Session of the Ninth Parliament, closed by Prorogation on August 10, 1904, and having reference to the Public Works Department or works under its charge (4 Edward VII).

Subject.	Full Title of the Statute.	Chapter.	Page in Statute Book.
Sums granted to His Majesty for the financial years ending June 30, 1904, and June 30, 1905, and the purposes for which they are granted.	An Act for granting to His Majesty certain sums of money for the public service of the financial years ending respectively June 30, 1904, and June 30, 1905.....	2	37
Respecting tolls to be levied by Company.	An Act to incorporate the Thompson River Improvement Company.....	130	261

N.B.—By Proclamation dated March 12, 1904, the Culbute Canal on the Ottawa River and locks, dams and other works associated therewith were declared to be abandoned as public works of Canada.

Vide Canada Gazette, Vol. XXXVII, p. 2115.

J. A. CHASSÉ,
Law Clerk.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, December 10, 1904.

NATIONAL ART GALLERY

CURATOR'S REPORT

FOR THE FISCAL YEAR ENDED JUNE 30, 1904.

NATIONAL ART GALLERY.

OTTAWA, November 24, 1904.

FRED. GÉLINAS, Esq.,
Secretary, Department of Public Works,
Ottawa.

SIR,—I have the honour to report that the following pictures have been purchased by the government from A. Suzor Coté, Esq., for the National Art Gallery of Canada, during the fiscal year ended June, 1904:—

'Retour des Champs.'

'Maree Montante.'

'Scene d'Automne (soir).'

for the sum of twelve hundred dollars ($1,200), one hundred and fifty dollars (150) and one hundred and twenty-five dollars ($125), respectively.

During the year, fourteen thousand nine hundred and sixty-six (14,966) visitors registered.

I have the honour to be, sir,

Your obedient servant,

L. FENNINGS TAYLOR,
Curator, National Art Gallery.

NAMES OF THE CHIEF OFFICERS

OF THE

DEPARTMENT OF PUBLIC WORKS

WITH

DATES OF APPOINTMENT, ETC., FROM 1841 TO 1904

NAMES OF THE CHIEF OFFICERS.

The names with the dates of the appointment, &c., of the principal Officials of the Department of Public Works, from 1841 to 1904.

Names.	Capacity or Office.	Date of Appointment. Served From	To
Under Statute 4-5 Vic., Cap. 38.			
CORPORATION BOARD OF WORKS.			
Killaly, Hon. H. H	Chairman		
Daly, Hon. D			
Harrison, S. B	Members	Dec. 29, 1841	Oct. 3, 1844
Sullivan, R. B			
Davidson, J., Esq			
Begly, Thomas A	Secretary	Aug. 17, 1841	
Keefer, Samuel	Chief Engineer	" 17, 1841	
Rubidge, F. B	Architect and Assistant Chief Engineer	Dec. 15, 1841	
NEW BOARD OF WORKS.			
Killaly, Hon. H. H	Chairman		
Daly, Hon. D			
Draper, Hon. W. H	Members	Oct. 4, 1844	June 8, 1846
Morris, Hon. W			
Papineau, Hon. D. B			
Under Statute 9th Vic., Cap. 37, &c.			
Robinson, Hon. W. B	Chief Commissioner	June 22, 1846	March 10, 1848
Taché, Hon. E. P	"	March 11, 1848	Nov. 26, 1849
Chabot, Hon. J	"	Dec. 13, 1849	March 31, 1850
Merritt, Hon. W. H	"	April 8, 1850	Feb. 11, 1851
Bourret, Hon. J	"	Feb. 12, 1851	Oct. 27, 1851
Young, Hon. John	"	Oct. 28, 1851	Sept. 22, 1852
Chabot, Hon. J	"	Sept. 23, 1852	Jan. 26, 1855
Lemieux, Hon. F	"	Jan. 27, 1855	Nov. 25, 1857
Alleyn, Hon. C	"	Nov. 26, 1857	Aug. 1, 1858
Holton, Hon. L. H	"	Aug. 2, 1858	" 6, 1858
Sicotte, Hon. L. V	"	" 7, 1858	Jan. 10, 1859
Rose, Hon. John	"	Jan. 11, 1859	June 12, 1861
Cauchon, Hon. Jos	Commissioner	June 13, 1861	May 23, 1862
Tessier, Hon. U. J	"	May 24, 1862	" 27, 1863
Drummond, Hon. L. T	"	" 28, 1863	July 23, 1863
Laframboise, Hon. M	"	July 24, 1863	March 29, 1864
Chapais, J. C	"	March 30, 1864	June 30, 1867
Casgrain, Hon. Chas. Eus	Second Commissioner	July 9, 1846	Feb. 29, 1848
Cameron, Hon. M	Assistant Commissioner	March 11, 1848	" 1, 1850
Wettenhall, James, Esq	"	Feb. 2, 1850	April 16, 1850
Bourret, Hon. Jos	"	April 17, 1850	Feb. 11, 1851
Killaly, Hon. H. H	"	Feb. 12, 1851	May 6, 1859
Keefer, Samuel	Deputy Commissioner	May 6, 1859	March 7, 1864
Trudeau, Toussaint	"	March 8, 1864	May 29, 1868
Begley, Thos. A	Secretary	Feb. 10, 1841	Oct. 31, 1858
Trudeau, Toussaint	"	Dec. 13, 1859	March 7, 1864
Braun, Frederick	"	March 8, 1864	July 1, 1867
Page, John	Chief Engineer	Oct. 31, 1873	Oct. 1, 1879

The names with the dates of the appointment, &c., of the principal Officials of the Department of Public Works, from 1841 to 1904—*Concluded.*

Names.	Capacity or Office.	Date of Appointment. Served From		To	
Under Statute 31 Vic., Chap. 12.					
McDougall, Hon. Wm	Minister	July	1, 1867	Dec.	7, 1869
Langevin, C.B., Hon. Hector L	"	Dec.	8, 1869	Nov.	6, 1873
Mackenzie, Hon. Alexander	"	Nov.	7, 1873	Oct.	16, 1878
Tupper, C.B., K.C.M.G., Sir Charles	"	Oct.	17, 1878	May	19, 1879
Langevin, C.B., K.C.M.G., Sir Hector L.	"	May	20, 1879	Aug.	11, 1891
Smith, Hon. Frank	Acting Minister	Aug.	14, 1891	Jan.	10, 1892
Ouimet, Hon. Joseph Aldric	Minister	Jan.	11, 1892	April	30, 1896
Desjardins, Hon. Alphonse	"	May	1, 1896	July	12, 1896
Tarte, Hon. J. Israël	"	July	13, 1896	Oct.	21, 1902
Sutherland, Hon. James	"	Nov.	11, 1902		
Trudeau, Toussaint	Deputy Minister	May	29, 1868	Oct.	1, 1879
Baillairgé, G. F	"	Oct.	4, 1879	Dec.	31, 1890
Gobeil, A	"	Jan.	1, 1891		
Braun, Frederick	Secretary	July	1, 1867	Sept.	30, 1879
Chapleau, S	"	Oct.	1, 1879	Nov.	4, 1880
Ennis, F. H	"	Nov	5, 1880	Jan.	13, 1885
Gobeil, A., I. S. O	"	Jan.	23, 1885	Dec.	31, 1890
Roy, E. F. E	"	"	1, 1891	"	31, 1900
Gelinas, Fred	"	June	8, 1901		
McPherson, D. A	Assistant Secretaty	Jan.	18, 1891	April	11, 1893
Desrochers, Rodolphe Charles	"	"	8, 1896		
Page, John	Chief Engineer	July	1, 1868	Oct.	1, 1879
Perley, H. F	"	Nov.	25, 1880	July	10, 1891
Coste, Louis	"	July	26, 1892	March	18, 1899
Lafleur, E. D	Acting Chief Engineer	March	18, 1899		
Scott, Thos. S	Chief Architect.	May	26, 1871	Oct.	30, 1881
Fuller, Thomas	"	Oct.	31, 1881	June	30, 1897
Ewart, David, I.S.O	"	Nov.	2, 1897		

NAMES

OF THE

OFFICIALS EMPLOYED ON THE SLIDES AND BOOMS OF CANADA

ON JUNE 30, 1904

WITH

DATES OF APPOINTMENT, SALARIES, ETC.

OFFICIALS EMPLOYED ON THE SLIDES AND BOOMS.

STATEMENT showing the Names, Dates of Appointment, Salaries, &c., of persons employed on the various Slides and Booms, on June 30, 1904.

Name.	Date of Birth.	Position.	Where employed.	Date of Appointment.	Salary.	Remarks.
Collector of Slide and Boom Dues.					$ cts.	
E. T. Smith	Nov. 26, 1846	Collector	Ottawa	July 1, 1889	1,800 00 a year	Date of first appointment to Crown timber office, Ottawa, June 23, 1864. Clerk in Dept. of Inland Rev., July 1, 1870, to June 30, 1889. Transferred to civil list, with rank of first class clerk, January 5, 1892.
F. X. Gagné	Sept. 23, 1859	Clerk	"	Dec. 16, 1897	1,003 75 "	Entered the service Aug. 13, 1889.
James Steen	June 17, 1830	Boatman	"	July 12, 1889	60 00 a month	Employed during the season of navigation for 8 months each year. Date of first appointment, May 26, 1861. Timber counter, Ottawa, for Dept. of Inland Revenue, Jan. 7, 1884, to June 30, 1889.
J. Brassard		"	"	March 1, 1901	60 00 "	Employed during the season of navigation, for 8 months each year.
Saguenay District						Saguenay district slides abandoned by authority of O.C., dated Feb. 5, 1896 (No. 168,740).
St. Maurice District.						
L. P. Dallaire		Paymaster	Three Rivers	May 1, 1898	66 66 a month	
P. Juneau		Boom master	Grand'Mère	May 1, 1902	50 00 "	
Jos. Pagé	July 7, 1845	"	M'th of St. Maurice	Dec. 10, 1879	75 00 "	
Jos. Dick		Asst. boom master	Three Rivers	May 19, 1898	75 00 "	
Gédéon Rousseau		Boom master	Shawenigan Falls	April 7, 1896	75 00 "	
Moïse Masson		"	Grandes Piles	May 19, 1898	75 00 "	
N. Lymburner	July 22, 1855	"	Shawenigan Falls	July 1, 1895	75 00 "	
A. Paquin		"	Ste. Flore	Dec. 1, 1901	75 00 "	
Ottawa District.						
G. P. Brophy	Feb. 24, 1846	Superintendent	Ottawa	July 6, 1873	2,500 00 a year	*Ottawa River Works*—In addition to the above officers, &c., there are employed
D. Scott	" 15, 1830	Accountant	"	Oct. 1, 1854	1,500 00 "	

J. C. Scott	June 27, 1865	Measurer	Ottawa	April 1, 1889	3 50	a day	during the running season, one foreman on slide at $1.50 and one assistant foreman at $1.25 a day; also 25 to 30 labourers at $1 to $1.40 a working day
J. Kent	Jan. 28, 1864	Clerk	"	Aug. 1, 1886	3 25	"	
Wm. Cain	April 22, 1860	Messenger	"	Jan. 1, 1892	1 35	"	
Pierre St. Pierre		Deputy slide master.	Carillon	June 1, 1897	1 40	"	Actively employed about 7 months. Oversees repairs in winter.
D. Noonan	June 17, 1840	Boom master	Gatineau	Mar. 21, 1878	500 00	a year	
J. Soulière	Nov. 8, 1829	Deputy slide master.	Chaudière	1878	2 50	a day	" "
P. D. Chéné		"	Hull	June 14, 1899	1 50	"	Employed about 6 months.
W. A. Shireff		"	Chats	April 26, 1898	1 50	"	Oversees repairs in winter.
John Harvey	May 22, 1831	Slide master	Arnprior	July 12, 1882	2 50	"	Actively employed about 7 months.
Joseph McCrea	Mar. 26, 1869	Boom master	Springtown	May 15, 1880	200 00	a year	Employed about 3 months during season of navigation.
Patrick Barry	" 27, 1858	Slide master	High Falls	Mar. 10, 1888	1 50	a day	Employed 5 months during season of navigation. Oversees repairs in winter.
Duncan McLaren	Jan. 7, 1860	Deputy slide master.	Portage du Fort	Sept. 7, 1881	456 25	a year	" " "
D. Rochon		"	Black River	Mar. 1, 1900	480 00	"	" " "
Wm. Selkirk		"	Lower Petawawa	Jan. 19, 1900	2 00	a day	" " "
P. O'Connor		"	Upper Petawawa	Mar. 18, 1898	2 00	"	
Wm. Thompson	May 3, 1843	"	Mountain	Oct. 10, 1879	1 25	"	" 6 mos. " "
S. Moorhead		"	Calumet	Mar. 1, 1901	1 25	"	" 6 to 7 mos. " "
John Mullin		"	Coulonge	April 10, 1890	1 50	"	" 4 mos. " "
H. R. Downey	May 16, 1846	"	Des Joachims	July 1, 1889	300 00	"	" " " "
J. F. McGuire		"	Dumoine	May 1, 1897	2 00	a day	Employed 3 months during season of navigation. Will inspect works when required
J. J. French		"	Crooked Chute	1888	2 00	"	" " "
A. H. Johnson	Nov. 28, 1839	"	Chenaux	1865	2 50	"	Paid during season of navigation, 7 mos.
Newcastle District.							
S. Clegg		Superintendent	Peterborough	Mar. 1, 1901	800 00	a year	
G. H. Giroux		Clerk, Supt's office	"	1, 1880	400 00	"	Receives $500 a year from Department of Railways and Canals.
W. T. Junkin		Slide master	Fenelon Fall	Nov. 15, 1896	100 00	"	$250 a year as lock-master, Dept. R. & C.
R. T. Hill		"	Buckhorn	July 1, 1891	100 00	"	Receives $150 a year from Department of Railways and Canals.
Hamilton Johnston		"	Heeley's Falls	" 15, 1892	200 00	"	
John Dinwoodie		"	Lakefield	June 20, 1893	150 00	"	Receives $240 a year from Department of Railways and Canals.
Richelieu District.							
C. Choquette		Boom master	Belœil Station	July 26, 1897	100 00	"	
Burlington Channel Swing Bridge.							
Wm. Omand		Bridge attendant	Burlington	Sept. 19, 1896	600 00	a year	
W. Hopkins		" assistant	"	July 1, 1902	1 50	a day	Employed 9 months.
H. Lampman		" "	"	Sept. 8, 1902	1 50	"	"
Jas. Eustice		" "	"	" 19, 1896	1 50	"	"

STATEMENT showing Names, &c., of persons employed on various works—*Concluded.*

Name.	Date of Birth.	Position.	Where employed.	Date of Appointment.	Salary.	Remarks.
Yamaska Lock.					$ cts.	
O. Mineau		Lock keeper	Yamaska	Sept. 1, 1885	75 00 a month	"
H. Lambert		"	"	July 1, 1897	40 00 "	"
Rivière du Lièvre Lock.						
Hugh R. Gorman		Lock master	Rivière du Lièvre	April 15, 1897	180 00 a year	
Charles Brazeau		Labourer	"	Mar. 3, 1902	35 00 a month	Employed 8 months.
Riviere St. Louis Feeder.						
Julien Monpetit		Gate keeper	Rivière St. Louis	May 11, 1903	10 00 "	

JOS. VINCENT.

NAMES

OF

PERSONS EMPLOYED ON THE VARIOUS GRAVING DOCKS

ON JUNE 30, 1904.

WITH

DATES OF APPOINTMENT, SALARIES, ETC.

GRAVING DOCK EMPLOYEES.

STATEMENT showing the Names, Dates of Appointment, Salaries, &c., of persons employed on the various Graving Docks, June 30, 1904.

Name.	Position.	Where Employed.	Date of Appointment.	Salary.	Remarks.
Esquimalt Graving Dock, British Columbia.				$ cts.	
John Devereux	Dockmaster	Esquimalt	Sept. 17, 1887	166 66 a month	
John Jeffcott	Engineer	"	Jan. 4, 1901	100 00 "	
F. N. Jones	Assistant engineer	"	" 8, 1901	80 00 "	
A. D. Grieves	Carpenter	"	Dec. 1, 1887	80 00 "	
W. Young	Labourer	"		50 00 "	
J. Stock	"	"	July 1, 1894	50 00 "	
Chas Jordan	Stoker	"		60 00 "	
G. Springer	"	"		60 00 "	
T. Young	Night watchman	"		50 00 "	
Lévis Graving Dock.					
Alf. Samson	Dockmaster	Lévis	Feb. 15, 1900	1,300 00 a year	
W. Macdougal	Mechanical engineer	"	June 1, 1888	75 00 a month	
T. Després	Asst. mechanical engineer	"	July 21, 1901	60 00 "	
Narcisse Lemelin	Fireman	"	June 1, 1888	40 00 "	
Kingston Graving Dock.					
F. S. Rees	Dockmaster	Kingston	April 1, 1897	1,000 00 a year	
Robert McLeod	1st engineer	"	July 1, 1892	75 00 a month	
Wm. Geoghegan	Fireman	"	" 1, 1892	45 00 "	
C. Staley	Watchman	"	" 1, 1892	45 00 "	

JOS. VINCENT.

LIST

OF

ENGINEERS, ENGINEMEN, FIREMEN, AND CARETAKERS

EMPLOYED IN THE

PUBLIC BUILDINGS THROUGHOUT THE DOMINION ON JUNE 30, 1904

DATES OF APPOINTMENT, SALARIES, ETC.

ENGINEERS AND CARETAKERS, PUBLIC BUILDINGS.

STATEMENT showing the Names, &c., of the Engineers, Enginemen, Firemen, Caretakers, Hoist Attendants and Watchmen employed at Dominion Public Buildings on June 30, 1904.

Place.	Building.	Name.	Date of Birth.	Position.	Date of Appointment.	Monthly Salary.	Time employed each Year.	Yearly Salary.
						$		$
Amherst.....N.S.	Post office.....	J. H. Chapman.....	Jan. 1, 1846	Caretaker.....	Sept. 1, 1900	33 33	12 months..	400 00
Antigonish..... "	Public building.....	Angus McDonald.....	Mar. -, 1829	"	Feb. 5, 1891	33 33	12 " ..	400 00
Annapolis..... "	Post office and custom house.	John McKay.....	Oct. 26, 1847	"	April 1, 1891	33 33	12 " ..	400 00
Arichat ..... "	Public building.....	A. DeRoch.....	.....	"	Nov. 13, 1903	12 50	12 " ..	150 00
Baddeck..... "	"	D. F. McKenzie.....	May 20, 1848	"	Jan. 21, 1899	20 83	12 " ..	250 00
Dartmouth..... "	"	I. C. Henley	Dec. 11, 1846	"	May 22, 1894	20 83	12 " ..	250 00
Digby ..... "	"	F. Dennison	Nov. 3, 1841	"	Mar. 14, 1902	33 33	12 " ..	400 00
Halifax ..... "	Dominion building	Richard Power.....	Aug. 15, 1834	Engineer.....	Oct. 1, 1871	62 50	12 " ..	750 00
" ..... "	"	John Powell	" 21, 1836	Fireman.....	" 1, 1871	50 00	8 " ..	400 00
" ..... "	"	J. F. Sullivan.	April 16, 1866	Caretaker	July 1, 1892	33 33	12 " ..	400 00
" ..... "	"	W. H. Gray.....	Nov. 26, 1848	Watchman.....	Sept. 10, 1891	39 00	12 " ..	468 00
" ..... "	Drill hall.....	John Crowell.....	Feb. 26, 1852	Engineer.....	Dec. 13, 1901	50 00	8 " ..	400 00
" ..... "	"	R. Harmon.....	Dec. 23, 1868	Caretaker ..	" 3, 1898	50 00	12 " ..	600 00
" ..... "	Armouries	R. Morrison.....	Mar. 26, 1857	Fireman.....	Mar. 4, 1903	50 00	8 " ..	400 00
" ..... "	Examining warehouse.....	M. O'Neil	Dec. 30, 1850	Caretaker	Oct. 1, 1897	37 50	12 " ..	450 00
" ..... "	Immigrant building.....	John Oxley	April 17, 1856	Fireman.....	Feb. 2, 1897	50 00	12 " ..	600 00
Kentville..... "	Public building	W. Hiltz.....	" 4, 1864	Caretaker	Nov. 14, 1900	33 33	12 " ..	400 00
Liverpool..... "	"	James Clements	June 5, 1835	"	June 27, 1900	33 33	12 " ..	400 00
Lunenburg..... "	"	J. E. Hebb.....	Nov. 3, 1833	"	" 7, 1895	25 00	12 " ..	300 00
New Glasgow .. "	Post office	J. A. Mutch	Dec. 13, 1840	"	Oct. 3, 1901	33 33	12 " ..	400 00
North Sydney..... "	Public building.....	Alex. Green	July 16, 1825	"	" 1, 1897	33 33	12 " ..	400 00
Pictou..... "	Post office and custom house.	Jas. Arbuckle.....	Feb. 18, 1836	" ...	Dec. 20, 1896	41 66	12 " ..	500 00
Springhill..... "	Post office.....	J. A. Watt	Sept. 5, 1849	" ...	" 1, 1903	33 33	12 " ..	400 00
Sydney South .... "	Post office and custom house.	Mrs. M. Keefe.....	.....	.....	Jan. 13, 1904	33 33	12 " ..	400 00
Truro ..... "	" " ..	Alex. P. Smith.....	Mar. 17, 1837	"	April 1, 1897	33 33	12 " ..	400 00
Windsor..... "	Post office	J. A. Mosher.	Nov. 16, 1841	"	Feb. 13, 1899	33 33	12 " ..	400 00
Yarmouth..... "	Public building.....	W. H. Whallen.....	Dec. 23, 1841	"	Mar. 1, 1900	33 33	12 " ..	400 00
Charlottetown....P.E.I.	Dominion building.....	Wm. J. Fraser.....	Jan. 1, 1836	" & engineer	April 3, 1894	33 33	12 " ..	400 00
" ..... "	"	Geo. Walker.....	Aug. 28, 1826	Messenger ..	Jan. 19, 1875	41 67	12 " ..	500 00
" ..... "	"	M. A. Allan	" 1, 1855	"	" 24, 1898	41 67	12 " ..	500 00
" ..... "	"	Angus McKenzie.....	Mar. 12, 1856	Watchman.....	Nov. 1, 1896	45 00	12 " ..	540 00
Montague..... "	Public building	M. Peardon.....	.....	Caretaker	May 1, 1901	13 33	12 " ..	160 00
Summerside.. "	Dominion building ..	A. MacSween.....	Sept. 25, 1835	"	Sept. 1, 1897	33 33	12 " ..	400 00
Bathurst..... N.B.	Post office	S. P. Achey	Aug. 18, 1873	"	Jan. 1, 1903	33 33	12 " ..	400 00

Chatham	"	"	C. Johnston	May	18, 1856	"	Mar.	27, 1895	25 00	12	300 00
Carleton, St. John, N.B.	Post office	"	James R. Reid	Aug.	15, 1823	Caretaker	Oct.	1, 1889	8 33	12 months	100 00
Dalhousie	"	"	Wm. Gould	Jan.	1, 1853	"	Nov.	26, 1890	33 33	12 "	400 00
Fredericton	"	"	L. Yerxa	Dec.	18, 1843	"	July	1, 1900	33 33	12 "	400 00
Marysville	"	"	G. W. Foster			"	Dec.	23, 1903	12 50	12 "	150 00
Moncton	"	"	E. B. Hicks	Jan.	11, 1832	"	Jan.	11, 1886	33 33	12 "	400 00
Newcastle	"	"	Patrick Keating	Mar.	13, 1840	"	Oct.	23, 1886	33 33	12 "	400 00
Richibucto	"	"	J. Murray			"	Feb.	1, 1904	25 00	12 "	300 00
St. John	"	Custom house	Neil J. Morrison	July	25, 1858	Eng. & caretaker	April	27, 1894	60 00	12 "	720 00
"	"	"	Christopher White	Nov.	20, 1844	Fireman	Nov.	9, 1885	50 00	12 "	600 00
"	"	"	James A. Paul	Aug.	1, 1837	Caretaker	Oct.	13, 1891	41 67	12 "	500 00
"	"	Post office	James Wolfe	Mar.	10, 1850	Engineer	Dec.	1, 1893	55 00	12 "	660 00
"	"	"	Edward Haney	Feb.	22, 1849	Hoist attendant	Nov.	27, 1882	50 00	12 "	600 00
St. Stephen	"	"	Samuel Topping	April	2, 1839	Caretaker	May	25, 1887	33 33	12 "	400 00
Sussex	"	"	Mrs. N. Dryden	June	21, 1840	"	Mar.	26, 1901	25 00	12 "	300 00
Woodstock	"	"	Charles Trafton	Jan.	20, 1839	"	May	1, 1897	33 33	12 "	400 00
Aylmer	P.Q.	"	A. Bourgeau			"	April	9, 1904	5 00	12 "	60 00
Buckingham	"	"	F. F. Bisson			"	Feb.	3, 1903	10 00	12 "	120 00
Coaticook	"	Public building	Israel Baldwin	Nov.	16 1839	"	June	27, 1889	33 33	12 "	400 00
Drummondville	"	"	A. Paré	April	27, 1842	"	"	5, 1902	25 00	12 "	300 00
Granby	"	"	J. A. Beauchemin	May	1' 1862	"	May	12, 1903	25 00	12 "	300 00
Fraserville	"	Post office	Z. Raymond	Nov.	—, 1831	"	Nov.	2, 1897	25 00	12 "	300 00
Hochelaga	"	"	J. H. Brown	Oct.	7, 1851	"	Mar.	27, 1902	16 66	12 "	200 00
Hull	"	" &c	J. I. Ma'ore	Dec.	1, 1843	"	"	8, 1900	12 50	12 "	150 00
Joliette	"	"	A. Ratel	"	29, 1845	"	Sept.	1, 1897	33 33	12 "	400 00
Lachine	"	"	P. O. Robert	Sept.	7, 1846	"	Jan.	26, 1899	8 33	12 "	100 00
Laprairie	"	"	Jos Brisson	Nov.	11, 1869	"	Nov.	22, 1901	4 16	12 "	50 00
L'Assomption	"	"	E. Arbour			"	July	1, 1904	12 50	12 "	150 00
Montreal	"	Dominion building	S. T. Murphy	May,	6, 1865	Foreman engin'r	Mar.	2, 1903	100 00	12 "	1,200 00
"	"	"	Ed. Lanctot	April	14, 1837	Caretaker	Dec.	3, 1898	41 67	12 "	500 00
"	"	Examining warehouse	M. Boyer	Feb.	18, 1848	Fireman	Mar.	4, 1882	50 00	12 "	600 00
"	"	"	F. Athole			"	Dec.	12, 1903	45 00	12 "	540 00
"	"	"	Jos. Loiseau	Jan.	4, 1869	Caretaker	Nov.	15, 1901	45 00	8 "	360 00
"	"	"	F. Nadon			Cleaner	Dec.	15, 1902	45 00	12 "	540 00
"	"	Post office	F. Green	Oct.	4, 1837	Engineer	Jan.	1, 1885	60 00	12 "	720 00
"	"	"	L. D. Thibault	Jan.	28, 1861	Electrician	June	1, 1885	75 00	12 "	900 00
"	"	"	G. S. Gingras	Dec.	13, 1867	" &c	Jan.	7, 1895	75 00	12 "	900 00
"	"	"	I. Trudeau	Jan.	22, 1863	Caretaker	Oct.	1, 1902	50 00	12 "	600 00
"	"	"	Oscar Renaud	Feb.	19, 1862	Elevator man	Sept.	10, 1898	50 00	12 "	600 00
"	"	"	Art. Forget	July	25, 1867	"	Dec.	15, 1893	50 00	12 "	600 00
"	"	"	S. N. Nickle	Dec.	25, 1871	"	Mar.	1, 1894	55 00	12 "	660 00
"	"	"	L. Brault	"	29, 1854	"	Sept.	1, 1901	50 00	12 "	600 00
"	"	"	C. Vadebonoeur	May	17, 1842	Caretaker w. c.	Feb.	6, 1864	50 00	12 "	600 00
"	"	"	J. Dulrisac	Feb.	2, 1863	Messenger	Dec.	15, 1893	2 00 p.d.	12 "	730 00
"	"	Inland revenue	Louis St. Jean	Sept.	17, 1840	Fireman	"	1, 1892	50 00	12 "	600 00
"	"	Examining warehouse	H. Marchand	"	6, 1849	"	"	2, 1882	45 00	12 "	540 00
"	"	Custom house	C. Daudelin	June	19' 1843	"	July	16, 1892	37 50	12 "	450 00
"	"	"	H. Valiquette			Carpenter	Feb.	1, 1904	52 00	12 "	624 00
"	"	Custom house and ex. wareh.	B. Lajeunesse	Nov.	20, 1861	Fireman	Nov.	23, 1896	50 00	12 "	600 00
"	"	Drill hall and armoury	J. Gagnier	April	4, 1867	Engineman	Feb.	14, 1899	45 00	12 "	500 04

STATEMENT showing the Names, &c., of the Engineers, Enginemen, Firemen, Caretakers, Hoist Attendants and Watchmen employed at the Dominion Public Buildings, &c.—*Continued.*

Place.	Building.	Name.	Date of Birth.	Position.	Date of Appointment.	Monthly Salary.	Time employed each Year.	Yearly Salary.
						$ cts.		$ cts.
Montreal	" "	J. Doherty		Fireman	Dec. 15, 1903	45 00	8 "	360 00
Quebec	Examining warehouse	D. P. Kennedy	Feb. 9, 1865	Engineer	April 1, 1897	75 00	12 "	900 00
"	"	T. P. McLaughlin	Aug. 25, 1871	Fireman	July 26, 1892	53 33	12 "	640 00
"	Cullers office	James O'Neil	" 15, 1861	"	Aug. 1, 1894	45 00	12 "	540 00
"	Custom office	John R. Mountain	Nov. 1, 1848	"	Nov. 10, 1888	45 00	12 "	540 00
"	Gov. Gen'ls quarters	J. Parent	May 29, 1852	"	Jan. 1, 1902	33 33	12 "	400 00
"	Post office	J. Roy	Feb. 25, 1836	Caretaker	Sept. 1, 1897	58 33	12 "	700 00
"	"	F. J. Cooper	July 8, 1858	Fireman	June 25, 1895	55 00	12 "	660 00
Peribonca	Immigration building	E. Roy	Dec. 14, 1877	Caretaker	Oct. 1, 1902	25 00	12 "	300 00
Roberval	"	J. B. Carbonneau	Aug. 12, 1864	"	Nov. 20, 1901	25 00	12 "	300 00
Rimouski	Post office	A. Lepage	Feb. 7, 1866	"	Jan. 1, 1901	12 50	12 "	150 00
Richmond	Public building	H. Desmarais	July 14, 1869	"	May 7, 1898	25 00	12 "	300 00
Sherbrooke	"	O. Desève	Aug. 6, 1848	"	April 2, 1898	33 33	12 "	400 00
Sorel	Post office	C. Robitaille	Jan. 22, 1848	"	Sept. 1, 1897	33 33	12 "	400 00
Saint-Henri	"	A. C. A. Bissonnette	May 25, 1858	"	Mar. 4, 1895			
Saint-Hyacinthe	Public building	F. X. Tétrault	Nov. 8, 1846	"	Aug. 5, 1893	33 33	12 months	400 00
Saint-Jean	Post office	L. Forrant	Jan. 31, 1849	"	April 14, 1897	29 16	12 "	350 00
Saint-Jérôme	Public building	J. Savard	Oct. 24, 1859	"	Sept. 1, 1900	33 33	12 "	400 00
Trois-Rivières	Custom house	Ph. Gravelle	June 3, 1828	"	Feb. 1, 1891	25 00	12 "	300 00
"	Post office	A. Gauthier	Feb. 4, 1850	"	" 1, 1898	33 33	12 "	400 00
Victoriaville	Public building	G. Beaudet		"	Mar. 3, 1904	6 25	12 "	75 00
Amherstburg, Ont.	Post office	R. Elliott	Aug. 22, 1835	"	May 7, 1897	33 33	12 "	400 00
Almonte	"	Wm. Moulton	Mar. 23, 1839	"	Jan. 29, 1891	33 33	12 "	400 00
Arnprior	Public building	R. B. McCrerary	Jan. 11, 1862	"	Mar. 15, 1899	33 33	12 "	400 00
Brockville	Post office	H. Purvis	Sept. 12, 1826	"	Dec. 15, 1900	33 33	12 "	400 00
Brantford	"	John Squire	April 24, 1842	"	Oct. 27, 1880	50 00	12 "	600 00
Barrie	"	E. Sivigny	Mar. 19, 1847	"	May 1, 1903	41 66	12 "	500 00
Belleville	"	S. Haight	Aug. 26, 1857	"	Jan. 24, 1901	50 00	12 "	600 00
Berlin	"	J. Clemens	June 21, 1840	"	May 15, 1900	33 33	12 "	400 00
Brampton	"	James McBride	Oct. 5, 1840	"	Jan. 29, 1901	33 33	12 "	400 00
Carleton Place	"	Jas. E. Haltpenny	April 17, 1858	"	May 13, 1892	25 00	12 "	300 00
Chatham	"	W. W. Mitchell	May 25, 1848	" &c	Jan. 7, 1885	41 66	12 "	500 00
Cornwall	"	R. Conroy	Nov. 6, 1848	"	April 1, 1897	33 33	12 "	400 00
Cayuga	"	G. A. Gibson	May 29, 1861	"	Sept. 3, 1891	4 16	12 "	50 00
Clinton	"	J. Scott		"	Feb. 9, 1904	4 16	12 "	50 00
Cobourg	"	John Boyd	Dec. 9, 1836	"	Aug. 1, 1901	33 33	12 "	400 00

Deseronto	"	"	M. Hart	Jan.	18,	1862	"	July	1,	1903	33	33	12	"	400 00
Dundas	"	"	Wm. Graham	Dec.	5,	1853	"	"	1,	1898	4	16	12	"	50 00
Galt	"	"	T. Barrett	June	17,	1861	"	Aug.	1,	1902	33	33	12	"	400 00
Guelph	"		R. McLeod	July	30,	1865	"	May	25,	1901	33	33	12	"	400 00
Goderich	"	" &c	G. Bissett	April	14,	1851	"	Sept.	1,	1897	33	33	12	"	400 00
Hamilton	"	Dominion building	Alfred Barnard	Dec.	27,	1847	"	Dec.	10,	1894	50	00	12	"	600 00
"	"	"	J. Wigglesworth	Aug.	7,	1863	Fireman	Oct.	1,	1896	50	00	8	"	400 00
"	"	"	Thomas Nicholson	Dec.	17.	1857	Engineer	Mar.	2,	1887	50	00	12	"	600 00
Ingersoll	"	Public building	John McDonald	June	30,	1841	Caretaker	Nov.	20,	1900	33	33	12	"	400 00
Kingston	Ont.	R. Military College	T. Harrison				Fireman				45	71	7	months	320 00
"	"	Armoury	F. Forsythe				Engineer	Feb.	11,	1901	50	00	12	"	600 00
"	"	R. Military College	Wm. F. Hazlett	May	27,	18 4	Engineer	Nov.	20,	1900	75	00	12	"	900 00
"	"	"	J. Quigley	Oct.	30,	1857	Fireman	June	1,	1903	55	00	12	"	660 00
"	"	"	M. Redmon	"	2,	1867	"	Jan.	29,	1902	45	00	12	"	540 00
"	"	"	L. Cochrane	Mar.	1,	1879	Electrician	July	29,	1902	55	00	12	"	660 00
London	"	Custom house	M. Mullhern	Sept.	4,	1837	Engineman	Sept.	18,	1888	50	00	12	"	600 00
"	"	"	Wm. Greer	Oct.	12,	1839	Caretaker	Mar.	16,	1884	33	33	12	"	400 00
"	"	Post office	John Price	"	6,	1836	Engineer	Jan.	14,	1884	50	00	12	"	600 00
Lindsay	"	" and C. house	Wm. Galbraith	Jan.	8,	1844	Caretaker	Nov.	17,	1893	33	33	12	"	400 00
Napanee	"	" "	Mrs. C. E. Webster	July	12,	1846	"	Oct.	4,	1901	33	33	12	"	400 00
Niagara Falls	"	"	Wm. J. Sheppard	Jan.	4,	1854	"	Jan.	15,	1897	33	33	12	"	400 00
Orangeville	"	"	D. McPherson	April	30,	1851	"	July	15,	1900	33	33	12	"	400 00
Orillia	"	"	John Frawley	Mar.	14,	1844	"	Nov.	1,	1898	25	00	12	"	300 00
Paris	"	Public building	Sam Lee	———		1842	"	July	7,	1902	33	33	12	"	400 06
Peterborough	"	Post office	John Irwin	May	17,	1842	"	Sept.	8,	1887	25	00	12	"	300 00
"	"	Custom house	Wm. Taylor	Nov.	25,	1839	"	Jan.	26,	1899	25	00	12	"	300 00
Petrolea	"	Post office	H. McNaughton	Sept.	14,	1862	"	May	1,	1903	33	33	12	"	400 00
Picton	"	Public building	D. Welbanks	Feb.	8,	1850	"	April	11,	1902	33	33	12	"	400 00
Port Arthur	"	"	John Whitehead	April	15,	1839	"	Sept.	11,	1893	25	00	12	"	300 00
Port Colborne	"	Post office	Wm. Armstrong	Sept.	9,	1846	"	June	11,	1888	20	00	12	"	240 00
Port Hope	"	"	Levi Reynolds	Feb.	15,	1839	"	Nov.	17,	1885	33	33	12	"	400 00
Pembroke	"	Public building	Samuel Hamilton	June	4,	1834	"	Oct.	29,	1890	33	33	12	"	400 00
Prescott	"	Post office	R. Birks	April	6,	1822	"	May	1,	1899	33	33	12	"	400 00
Rat Portage	"	Public building	Mrs. J. Link	May	10,	1850	"	Dec.	7,	1901	33	33	12	"	400 00
Sarnia	"	"	J. H. Dyble	Aug.	25,	1860	"	Nov.	7,	1903	33	33	12	"	400 00
Smith's Falls	"	"	P. W. Lewis	"	19,	1863	"	Jan.	8,	1896	25	00	12	"	300 00
Stratford	"	Post office, &c	J. P. Murray	July	29,	1855	Engineer	"	26,	1900	50	00	12	"	600 00
St. Catharines	"	"	D. C. Holmes	Sept.	30,	1842	Caretaker	Sept.	1,	1903	33	33	12	"	400 00
St. Thomas	"	"	G. Luton	May	25,	1857	"	April	14,	1903	33	23	12	"	400 00
Strathroy	"	Public building	Wm. J. Johnston	"	12,	1840	"	Oct.	25,	1890	33	33	12	"	400 00
Toronto	"	Dominion buildings	H. E. Hamilton	April	14,	1838	Forem., engineer	April	10,	1902	100	00	12	"	1,200 00
"	"	Inland revenue building	C. H Baillie	Sept.	22,	1852	Fireman	Jan.	13,	1891	55	00	12	"	660 00
"	"	Custom-house	Fred. Faragher	Oct.	16,	1865	"	Nov.	1,	1889	55	00	12	"	660 00
"	"	"	Ed. Switzer	"	10,	1856	Hoist attendaut	Aug.	18,	1901	55	00	12	"	660 00
"	"	Examining warehouse	James Cosgrove	Feb.	10,		Engineer				70	00	12	"	840 00
"	"	"	Ed. Appleton	Sept.	26,	1864	Fireman	Sept.	23,	1886	60	00	12	"	720 00
"	"	"	Alexander Dey	"	27,	1863	Hoist attendant	Dec.	1,	1887	50	00	12	"	600 00
"	"	"	Wm. Chenery	Dec.	19,	1851	"	"	1,	1887	50	00	12	"	600 00
"	"	"	F. Simpson	Jan.	8,	1859	"	Sept.	1,	1903	50	00	12	"	600 00
"	"	"	Thos. Jones	Nov.	10,	1853	Watchman	April	4,	1902	50	00	12	"	600 00

STATEMENT showing the Names, &c., of the Engineers, Enginemen, Firemen, Caretakers, Hoist Attendants and Watchmen employed at the Dominion Public Buildings, &c.—*Concluded.*

Place.	Building.	Name.	Date of Birth.	Position.	Date of Appointement	Monthly Salary.	Time employed each year.	Yearly Salary.
						$ c.		$ c.
Toronto	Union station	J. Gormaly	" 26, 1872	Hoist attendant.	Oct. 17, 1901	50 00	12 "	600 00
"	"	G. H. Armstrong		Elevatorman	April 11, 1904	50 00	12 "	600 00
"	P. O. Station	James Rae		Caretaker	Jan. 12, 1904	55 00	12 "	660 00
"	Post office	J. Somers	April 8, 1835	Engineer	Oct. 9, 1897	50 00	8 "	400 00
"	"	George Latray	May 20, 1858	Fireman	Nov. 1, 1896	55 00	8 "	440 00
"	"	W. J. Graham	Mar. 16, 1840	"	Oct. 1, 1896	55 00	8 "	440 00
"	"	J. C. Davidson	May 21, 1876	Elevatorman	April 11, 1904	45 00	12 "	540 00
"	Drill hall	Richard Eyre	Oct. 11, 1849	Fireman	Mar. 25, 1895	50 00	12 "	600 00
"	"	D. Glionna	Aug. 8, 1835	"	Oct. 1, 1898	50 00	12 "	600 00
Trenton	Public building	David Allen	May 13, 1844	Caretaker	Aug. 31, 1889	33 33	12 "	400 00
Windsor	Post office	I. Belleperche	Oct. 26, 1848	Engineman	Dec. 24, 1897	50 00	8 "	400 00
"	"	W. Curtis	Mar. 6, 1841	Caretaker	Nov. 9, 1880	33 33	12 "	400 00
"	Drill hall	Peter Smith		Engineer	Jan. 21, 1902	50 00	8 "	400 00
Walkerton	Public building	T. Gibson	Aug. 14, 1838	"	Nov. 1, 1897	33 33	12 "	400 00
Woodstock	"	Robert Kerr	June 6, 1864	"	Dec. 11, 1901	33 33	12 "	400 00
Brandon Man.	"	T. Giles	Mar. 30, 1843	"	Aug. 1, 1897	50 00	12 "	600 00
Portage la Prairie	"	J. S. Telfer		"	July 1, 1904	33 33	12 "	400 00
Winnipeg	Post office	J. D. McDougall	May 1, 1843	Engineman	Jan. 21, 1900	75 00	12 "	900 00
"	"	John Mikulezky	" 6, 1879	Fireman	Nov. 13, 1900	55 00	12 "	660 00
"	"	Joseph Coutu	" 10, 1843	Hoist attendant.	Mar. 16, 1887	55 00	12 "	660 00
"	"	Joseph Gagnier	April 11, 1853	Watchman	June 7, 1892	55 00	12 "	660 00
"	Custom-house	J. G. Russell	Oct. 15, 1857	Fireman	Dec. 12, 1900	45 00	8 "	360 00
Calgary N.W.T.	Public building	E. N. Brown	Mar. 8, 1845	Caretaker	Jan. 24, 1891	45 00	12 "	540 00
"	Court-house	J. B. Mitchell	May 21, 1841	"	Dec. 1, 1902	45 00	12 "	540 00
Carnduff	"	Alex Deans	Sept. 19, 1859	"	Oct. 1, 1903	41 66	12 "	500 00
Edmonton	Land and registry office	R. Wylie	July 7, 1859	"	June 21, 1894	33 33	12 "	400 00
"	Court-house	L. Brunelle		"	April 7, 1903	45 00	12 "	540 00
Lethbridge	Court-house & C.-house	Mrs. E. Hodder	Aug. 4, 1854	"	Mar. 1, 1901	45 00	12 "	540 00
Moosomin	"	J. C. Jopp	Jan. 6, 1848	"	April, 29, 1897	50 00	12 "	600 00
Moose-jaw	"	R. Smale	July 21, 1865	"	Nov. 21, 1898	33 33	12 "	400 00
Macleod	"	John Ryan	June 24, 1827	"	" 1, 1893	55 00	12 "	660 00
Medicine Hat	"	J. H. G. Bray	Jan. 24, 1841	"	June, 7, 1900	45 00	12 "	540 60
Prince Albert	Land and registry office	Mrs. G. Cassie		"	Jan. 1, 1904	33 33	12 "	400 00
Regina	Court-house & C.-house	P. McAra	Mar. 24, 1840	"	Aug. 1, 1889	50 00	12 "	600 00
"	" &c	Jas. McLachlan	Dec. 9, 1840	Fireman	Oct. 3, 1898	40 00	8 "	320 00
"	Land office	W. J. Gore	July 22, 1863	Caretaker	May 6, 1901	45 00	12 "	540 00

Wolseley	"	Court-house	W. Hare	Dec.	2, 1857	"	Mar.	1, 1901	45	00	12	"	540 00
Yorkton	"	"	Geo. Betts			"	Feb.	6, 1903	41	66	12	"	500 00
Atlin	B.C.	Public building	J. A. Fraser	Jan.	1, 1851	"	June	26, 1901	12	50	12	"	150 00
Kamloops	"	Post office	W. Saul	Dec.	15, 1837	"	April,	1, 1902	50	00	12	"	600 00
Nanaimo	"	Public building	J. Thompson	Sept.	2, 1836	"	May	1, 1897	50	00	12	"	600 00
Nelson	"	"	B. B. Smith	"	12, 1845	"	Mar.	7, 1903	50	00	12	"	600 00
New Westminster	"	Post office	G. D. McMurphy	Dec.	21, 1870	"	Jan.	18, 1901	50	00	12	"	600 00
Rossland	"	Public building	D. Mackenzie	Oct.	14, 1848	"	April	1, 1903	50	00	12	"	600 00
Vancouver	"	"	S. Chisholm	April	18, 1850	"	Oct.	1, 1903	50	00	12	"	600 00
"	"	"	P. Powers	Mar.	21, 1836	Watchman	Feb.	10, 1901	50	00	12	"	600 00
"	"	"	C. F. Bosomworth			Asst. caretaker	July	7, 1904	50	00	12	"	600 00
Victoria	"	New Dominion building	Wm. McKay	Dec.	31, 1857	Caretaker	Feb.	4, 1898	50	00	12	"	600 00
"	"	Dominion building	A. Johnson	May	12, 1858	Asst. caretaker	April	1, 1899	60	00	12	"	720 00
"	"	"	R. C. Bradley	Aug.	13, 1843	Fireman	Oct.	1, 1903	45	00	8	"	360 00
"	"	"	J. McMillan	July	8, 1876	Elevatorman	Nov.	27, 1898	60	00	12	"	720 00
"	"	"	Geo. Noot	Aug.	9, 1845	"	Oct.	15, 1900	45	00	12	"	540 00
"	"	Old Custom-house	Geo. Lyall	Feb.	12, 1843	Caretaker	May	8, 1900	50	00	12	"	600 00
Dawson	Y.T.	Post office	J. W. Wilson			"	Jan.	1, 1902	160	00	12	"	1,920 00
"	"	"	W. Bishop			Watchman	May	1, 1901	160	00	12	"	1,920 00
"	"	"	Mrs. R. Palardis			Charwoman	"	1, 1902	150	00	12	"	1,800 00
"	"	Government House	S. Waldron			Caretaker	Oct.	15, 1901	125	00	12	"	1,500 00
White Horse	"	Public building	C. J. McLennan			"	"	30, 1902	100	00	12	"	1,200 00

JOS. VINCENT.

OFFICIAL CORRESPONDENCE

DEPARTMENT OF PUBLIC WORKS

FROM

JULY 1, 1867, TO JUNE 30, 1904

OFFICIAL CORRESPONDENCE.

LETTERS Received and Sent from July 1, 1867, to June 30, 1904

Year.	Received.	Sent.
1867—From July 1 to December 31	2,075	1,511
1868 " January 1 to December 31	3,498	2,317
1869 " " "	3,448	2,171
1870 " " "	4,961	3,185
1871 " " "	6,268	3,983
1872 " " "	8,333	4,428
1873 " " "	10,072	5,707
1874 " " "	9,800	5,043
1875 " " "	9,006	5,006
1876 " " "	7,971	4,773
1877 " " "	7,517	4,425
1878 " " "	6,886	4,021
1879 " " to October 6	7,186	4,547
1879 " October 7 to December 31	2,033	810
1880 " January 1 "	8,451	4,411
1881 " " "	9,599	5,529
1882 " " "	10,505	5,699
1883 " " "	11,633	6,227
1884 " " "	13,114	6,903
1885 " " "	8,977	5,321
1886 " " "	9,644	5,352
1887 " " to June 30	4,866	2,735
1887 " July 1 " 1888	10,493	6,343
1888 " " " 1889	10,522	7,042
1889 " " " 1890	10,098	7,448
1890 " " " 1891	10,576	7,286
1891 " " " 1892	11,637	6,700
1892 " " " 1893	11,720	6,220
1893 " " " 1894	9,517	6,028
1894 " " " 1895	10,190	5,148
1895 " " " 1896	10,223	5,573
1896 " " " 1897	11,404	5,033
1897 " " " 1898	9,640	5,270
1898 " " " 1899	9,639	4,784
1899 " " " 1900	12,139	5,938
1900 " " " 1901	13,179	6,255
1901 " " " 1902	15,880	5,067
1902 " " " 1903	13,140	6,373
1903 " " " 1904	11,300	5,878

LETTERS Sent from Chief Engineer's Office, from January, 1880, to June 30, 1904.

Year.	—	No.
1880	From January 10 to June 30	418
1880	" July 1 " 1881	1,795
1881	" " " 1882	2,352
1882	" " " 1883	2,651
1883	" " " 1884	3,611
1884	" " " 1885	3,119
1885	" " " 1886	2,867
1886	" " " 1887	3,281
1887	" " " 1888	3,552
1888	" " " 1889	4,229
1889	" " " 1890	3,374
1890	" " " 1891	3,948
1891	" " " 1892	4,009
1892	" " " 1893	4,232
1893	" " " 1894	3,966
1894	" " " 1895	4,603
1895	" " " 1896	4,239
1896	" " " 1897	4,994
1897	" " " 1898	4,696
1898	" " " 1899	5,277
1899	" " " 1900	7,366
1900	" " " 1901	4,341
1901	" " " 1902	6,759
1902	" " " 1903	4,327
1903	" " " 1904	5,295

NOTE.—The letters, including returns, received in the Chief Engineer's Office may be estimated at the rate of two received to one sent.

26

LETTERS Received and Sent, Chief Architect's Office, from January 1, 1880, to June 30, 1904.

—	Received.	Sent.
1880—From January 1 to June 30		1,273
1880 " July 1 " 1881		2,943
1881 " " " 1882		2,859
1882 " " " 1883	3,538	4,600
1883 " " " 1884	3,860	6,004
1884 " " " 1885	4,500	6,718
1885 " " " 1886	6,075	6,450
1886 " " " 1887	6,816	6,380
1887 " " " 1888	6,947	6,870
1888 " " " 1889	6,484	7,667
1889 " " " 1890	7,448	6,578
1890 " " " 1891		7,751
1891 " " " 1892	6,113	4,260
1892 " " " 1893	7,428	6,453
1893 " " " 1894	6,900	4,517
1894 " " " 1895	7,538	5,327
1895 " " " 1896	7,843	5,783
1896 " " " 1897	10,700	8,200
1897 " " " 1898	10,867	8,547
1898 " " " 1899	10,913	8,762
1899 " " " 1900	12,386	9,878
1900 " " " 1901	12,287	9 860
1901 " " " 1902	12,560	10,330
1902 " " " 1903	13,430	11,106
1903 " " " 1904	14,710	15,590

2044 106 515 018